

INSIDE DOPE

Learn to live and laugh—
Thus delay your epitaph

By **GEORGE F. TAUBENECK**

Stories of the Week
Definition of Football
Add Newspaper Boners
Fine German People
Romney Has a Sturdy Background
We Shoulda Stood In Bed

Stories of the Week

We hope the Milks people, who operate a handsomely modern home appliance store out north on Detroit's Woodward Ave., will forgive us for this notation.

Their huge neon sign reads: Television MILKS Appliances.

Veterans in our industry could find a double meaning in that.

After a week's stay at Aunt Carol's, 10-year-old Suzanne dutifully wrote home to mother—assuring her that all was well, and that she was having a fine time. She closed on this note:

"I'm in love with a boy here, but I can't tell you his name. It's a long one, and I can't spell it."

Novelist Colette understood love. When a niece complained that she couldn't figure out whether or not her boy friend was serious, Mme. Colette helped:

"When a man begins to act foolish, then the love affair is serious for him."

First two syllables of the word management are:

- (1) Man.
- (2) Age.

Definition of Football

That crazy autumn period when girls whistle at men who wear sweaters.

Add Newspaper Boners

"The Sheppard trial is expected to last at least six years."—*Indianapolis Times*.

"The right leg of the wreck victim was amputated above the left knee."—*Kansas City Star*.

The Museum will have its 1923 Doble steam car, one of the few survivors of its race, in poperating condition for the Festival—*Grosse Pointe News*.

"It marked the first scoreless effort for Texas since TCU shut out the Longhorns in 1946."—*Detroit Free Press*.

Fine German People

Sponsored by the U. S. Department of State, 12 top West Germany trade paper editors toured our United States late this year. Flatteringly, one of their ports of call was AIR CONDITIONING & REFRIGERATION NEWS.

An interpreter accompanied them. First thing he did, after we were assembled in Phil Redeker's spacious office, was plug in an electronic device which converted German into English, and vice versa.

We shan't attempt to relay their questions. Mostly they were concerned with publishing practices and ideals (the German editors applauded several answers concerning our policies, we report smugly). BUT: we are happy to report their answers to our questions, to wit:

Q: "Is it true that American foreign policy has made America unpopular in Europe?"

A: "Possibly in France and England. But not in West Germany. Our people appreciate what the United States has done for us."

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AIR CONDITIONING & REFRIGERATION NEWS

THE NEWS PAPER OF THE INDUSTRY

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District Amana Room Conditioners

CEDAR RAPIDS, Iowa—Amana Refrigeration, Inc. introduced its 1955 line of food freezers and two new lines of room air conditioners at a distributor convention recently, during which Amana officials reported a major upswing in freezer business.

Amana's over-all sales this year are running 35% ahead of 1953, said Executive Vice President George C. Foerstner, with October sales by distributors running nearly double last year and 700 units ahead of September. Retail sales gains in October (based on warranty card returns showed greater gain than distributor sales, Foerstner said.

The company will step up its advertising and promotional activities in 1955, said Merlin Morris, advertising manager. Highlights will be Amana's sponsorship of major midwest college basketball games on a national television hook-up on Saturday afternoons (scheduled to start Dec. 11), and a direct mail consumer contest

(Concluded on Page 17, Col. 1)

Home, Auto A.C. Attract at ARI Show

MINNEAPOLIS—Approximately 1,200 persons from all sections of the country were on hand here last week to take in another of the ARI Educational Conferences and Exhibits and attend the 17th annual convention of the Refrigeration Service Engineers Society.

The conference and show were held in the Municipal auditorium.

Nearly 80 manufacturers representing all divisions of the industry participated in the show, which ran from Thursday, Nov. 18, through Saturday, Nov. 20.

Educational sessions were held in the morning and early afternoon prior to exhibit hours.

Final session of the RSES convention, devoted to society business, took place Sunday morning, Nov. 21 at the Radisson hotel.

The exhibits conformed closely to the pattern of previous ARI conferences with cutaways and operating hookups to demonstrate functions of various components and units dominating the show.

Two major new interests of the industry generally—residential and automobile air conditioning—were very much in evidence.

A 1955 Chrysler New Yorker

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Westinghouse '55 Models Include Big-Oven Range

MANSFIELD, Ohio—A complete line of automatic defrosting refrigerators, ranges with larger ovens, a drinking water cooler for the home, an automatic dishwasher for the kitchen modernization field, and a new low-price dehumidifier are included in the appliance lines for 1955 introduced recently by Westinghouse Electric Corp.

In addition, Westinghouse announced that it will enter the built-in range field in April with separate surface cooking and oven units.

Seven new refrigerators—four with "Frost-Free" automatic defrosting and three with pushbutton defrosting, were announced by the Westinghouse Electric Appliance Div. here.

The new models, all of which feature completely new interior and exterior styling, range from a two-door Frost-Free model with a capacity of 11½ cu. ft. to an 8-cu. ft. model equipped with push-button defrosting.

Featured on three Frost-Free models is an automatic twin juice fountain that automatically mixes juice concentrate under pressure with the proper amount of pre-cooled water to deliver a frothy, cold, ready-mixed drink. The juice container has two compartments,

(Concluded on Page 6, Col. 1)

RACCA Plans Allow Time for Discussions At Miami Beach

MIAMI BEACH, Fla.—With only two formal talks scheduled in a two-day convention, the Refrigeration and Air Conditioning Contractors Association is allowing plenty of time for general discussion of industry problems at its eighth annual convention here.

The contractors will gather at the Hotel diLido on Thursday and Friday, Dec. 2 and 3 to thrash out problems of apprentice training, fair trade complaints against dairies, and organization and supervision of contractor sales.

The invited speakers are Peter T. Schoemann, assistant to United Association President Martin P. Durkin, and Robert Secrest, Federal Trade Commissioner.

Schoemann will discuss "United Association Interest and Participation"

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Heating, Ventilating Show Will Be Largest Ever

NEW YORK CITY—Over 400 exhibitors have lined up displays for the 12th International Heating and Ventilating Exposition, to be the largest ever held.

Advance information indicates that the announcements of many new products are specially planned for the occasion, it was reported.

The exposition will be staged in the Commercial Museum and Convention Hall at Philadelphia, coinciding with the ARI show.

(Concluded on Back Page, Col. 1)

Fedders Shows '55 Room Units; Many Prices Reduced

WHITE SULPHUR SPRINGS, W. Va.—Announcement of new 1955 room air conditioners, including "Flexi-Mount Custom," casement, heat pump, and "Slim Lo-Boy" units, and a reduction in price of most popular models highlighted the program unfolded before almost 150 Fedders-Quigan Corp. distributors attending an annual convention here.

The company unveiled new Flexi-Mount Custom units in ½, ¾, 1, and 1½-ton sizes. A special ¾-ton model for casement windows was also displayed.

Shown too was a heat pump model which has an automatic defrosting device said to prevent freezing up when the cold-to-hot-air action is reversed. This model provides "both cooling and reverse cycle heating regardless of outside temperature, supplemented by electric heating in very cold weather," according to Fedders.

In general, it was announced, "prices have been reduced and geared to a greater volume of business. On many of the most popular models, prices have been lowered by an average of \$50."

(Concluded on Page 4, Col. 2)

Million Room Units Shipped In 9 Months

WASHINGTON, D. C.—An increase of 25.2% in shipments of room air conditioners by manufacturers during the first nine months of 1954 over the first nine months of 1953 has been announced by George S. Jones, Jr., managing director of the Air-Conditioning & Refrigeration Institute.

Over a million units (about 1,177,100) were shipped by manufacturers during the first nine months of 1954, compared with 940,310 units shipped during the same period of 1953, it was reported.

In 6-7 Years

Roberts Sees Million GM Air Conditioned Autos

DAYTON—The number of General Motors cars sold with air conditioning will pass the million mark in the next six or seven years, Mason M. Roberts, General Motors vice president and Frigidaire general manager, estimated recently.

Frigidaire is producing the new type combination cooling and heating system for 1955 Chevrolet V8 models. General Motors' 50 millionth car, produced on Nov. 23, was equipped with one of these units.

Through its compactness and ease of installation, the new unit represents a tremendous forward stride in the auto air conditioning business, Roberts declared.

"Automobile air conditioning is more than an accessory, it is an advancement in good living. It is a step forward in healthful, comfortable motoring due to the reduction of traffic noise and elimination of summer heat."

(Concluded on Back Page, Col. 5)

G-E Bows Wall Refrigerator In '55 Line

More Colors, Built-In Range, Bottom Freezer Section, Washer-Dryer Added

LOUISVILLE, Ky.—A "completely new concept of refrigerator design," a cabinet-like refrigerator-freezer combination which hangs on the wall at shoulder level like a picture, was introduced by General Electric Co. in a factory preview of its 1955 line.

Other highlights of the showing were:

1. A 13.7-cu. ft. refrigerator-freezer combination in which the

G-E Won't Set List On Many Appliances

LOUISVILLE, Ky.—General Electric Co.'s Major Appliance Div. has announced that it will no longer follow the practice of establishing suggested retail prices on many of the division's major appliance products.

Instead, each of its distributors will be charged with the responsibility of establishing recommended retail prices "to meet the highly volatile and competitive conditions existing within individual markets," the announcement said.

"In the past, while it has been our practice to recommend retail prices, such prices have been suggested only and have not been legally established under fair trade contracts,"

(Continued on Page 2)

freezer section is placed beneath the 10-cu. ft. refrigerator unit. Revolving shelves are a feature of the refrigerator section.

2. An announcement that six colors will be available in deluxe models of refrigerators, ranges, dishwashers, and washer-dryer combinations.

3. A compact, completely automatic combination washer-dryer offered in both free-standing and under-counter models.

4. An "Electric Kitchen Center," a single kitchen service unit which contains a combination washer-dryer, a "Disposal"-equipped sink, an automatic dishwasher, and an electric range complete with storage drawer—all mounted together under a stainless steel counter.

5. A new custom built-in range with a 21-in. oven and built-in surface unit. The wide-opening oven installs waist high in a 27-in. cabinet, with extra wall storage

(Concluded on Page 2, Col. 2)

Air Conditioning Is Top Topic at Heating Parley

CLEVELAND—Some preliminary results of investigations made in the air conditioned village at Austin, Texas will be presented at the 41st annual convention of the National Warm Air Heating and Air Conditioning Association in the Cleveland hotel here on Dec. 1 and 2.

This information will be presented by C. W. Nessel, chairman of the association's field investigation committee and an account executive for the Minneapolis-Honeywell Regulator Co., at the first morning session Wednesday, Dec. 1.

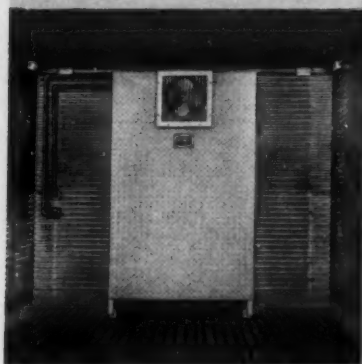
He will outline the procedures and objectives of the investigations and include comments on application problems that exercise a marked influence on the homeowner's comfort.

At the same session, Ned Cole, chairman of the air conditioning

(Concluded on Back Page, Col. 4)

Truk-Cel EUTECTIC BLOWER UNITS

PROVIDES
UNIFORM
TEMPERATURE
IN ANY
TRUCK BODY



"Holdover for Stopovers"

Available in models providing partial or complete holdover. Utilizes a minimum of floor space. Sanitary, compact, light in weight, simple in operation. A Truk-Cel Unit can be installed within truck body in a matter of minutes.



Let DOLE engineers show you how a Truk-Cel Unit can fit your needs—and do a better job! Write for Engineering Catalog CBE.

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103 PARK AVENUE, NEW YORK 17, N.Y.
In Canada:
Dole Refrigerating Products Limited
44 Elgin Street, Brantford, Ontario



UP TO 130 POUNDS of frozen food fits into the double-size freezing section in the bottom of this new General Electric refrigerator-freezer combination. The door of the freezer section opens with a foot pedal.



FROZEN FOOD is at your fingertips with the new General Electric wall refrigerator-food freezer combination. This completely new concept of refrigerator design puts the whole unit right up on the wall, with all food at convenient reaching level.



THIS AUTOMATIC home laundry appliance features a full wash-rinse-dry cycle, with such added "extras" as automatic dryer-timer control which determines the correct drying time for different fabrics and for different size loads, automatic unbalance control which redistributes unevenly loaded clothes, a built-in water heater, and a seven minute triple rinse cycle.

G-E Appliance Line for 1955--

(Concluded from Page 1, Col. 5)

space optional above and below the oven unit.

6. Two upright food freezers featuring an adjustable "Easy-Freezer" tray for freezing vegetables, fruits, and meats loosely. The food then may be packaged for economical servings later. The freezer line also includes two chest models.

Also introduced were a new automatic washer with a "Filter-Flo" washing system which cleans and recleans the wash water during the washing cycle; a matching clothes dryer with pushbutton controls; three electric Disposal models; a line of electric sinks and dishwashers featuring a deluxe undercounter dishwasher faced either in color or natural wood; and a "quick recovery" water heater.

WALL REFRIGERATOR

The new wall refrigerator, model LW-10, has 8-cu. ft. refrigerator capacity, while the freezer compartment has a two-cu. ft. capacity, holding 73 lbs. of frozen foods. The unit is 64 in. wide, stands 39½ in. high, is 17½ in. deep and occupies only two-thirds the space of a conventional refrigerator of the same capacity.

The unit is installed on the wall with special retainer and bolts which anchor securely to the wall studs for absolute stability. The unit may also be installed completely recessed into the wall or in a built-in wall alcove.

This wall-mounted combination is available in any of General Electric's Mix-or-Match colors listed below. An 8-in. base strip of decorative "Textolite" extends across the base of the cabinet.

The interior of the refrigerator section is finished in white porcelain; the freezer interior is aluminum. Automatic lighting is provided in the refrigerator section.

MAGNET SHUTS, SEALS DOOR

No handles protrude from the appliance; doors open at a touch by means of finger grips at the base. When the door is almost closed, a magnetic seal takes over operation and automatically shuts and seals the door.

The interior of the refrigerator compartment contains five aluminum shelves, three of which may be adjusted up or down. Two fruit and vegetable compartments with transparent sliding doors each hold over a half bushel of fresh fruit and vegetables.

On the inside of the double doors are five removable and adjustable shelves, two of which are especially designed to hold eggs. One of the doors also contains a new butter conditioner.

The freezer compartment contains three aluminum storage shelves and a special ice tray

shelf. The four ice trays are G-E's "Redicube" type trays which dispense ice cubes one at a time or in quantity. Three adjustable and removable shelves on the inside of the freezer door hold frozen juice cans and packaged foods.

REFRIGERATOR-FREEZER MODEL

The model LH-14 refrigerator-freezer with freezer compartment on the bottom will hold 130 lbs. of frozen food in the lower section.

The door of the freezer compartment opens with a foot pedal and is equipped on its inner surface with two storage racks. Two removable wire baskets roll out on silent nylon bearings. A built-in light gives clear visibility throughout the compartment.

Ice trays are arranged down one side. A new double-depth aluminum tray, which may be used for freezing desserts, is included. Other ice trays are G-E's exclusive "Mini Cube" tray which makes small juice-glass size cubes and the Redi-Cube tray.

Exterior color of this new combination is available in white, Canary Yellow, and Turquoise Green. Model LH-14M in white has a contrasting grey textured freezer door. Color styling is also carried inside the unit. The interior is a soft yellow trimmed in blue.

New corner lighting is featured in the refrigerator section. Lights are placed in both rear corners and covered with plexiglass panels for diffused, shadowless and glareless lighting. Also featured in this model are hinged foldaway bottle racks, which swing out of the way when not in use, and adjustable door shelves which can be removed for cleaning.

Since the refrigerator section of this Reach-Easy model is placed above the food freezer section, food may be removed from any shelf without stooping or stretching.

DETAILS ON OTHER MODELS TO BE ANNOUNCED LATER

Details on other conventional models in the General Electric 1955 line will be announced later.

The company's six Mix or Match colors include Satin White, Turquoise Green, Canary Yellow, Petal Pink, Cadet Blue, and Wood Tone Brown. While all of the deluxe ranges, refrigerators, dishwashers, and washer-dryer combinations will be available in any of these colors, certain medium and lower priced units will be offered in Canary Yellow or Turquoise Green. All models will be available in Satin White.

G-E officials said that when they set out to develop this color program for the kitchen and laundry, they were not thinking in terms of a colored refrigerator or colored washing machine, but of an entire kitchen in color. This is the key to G-E's color program.

As a result, the program extends

NO MORE STOOPING to baste the turkey! It's right at arm level in the oven of General Electric's new built-in range. Controls of the oven are recessed over the door. Companion piece to the oven is the smart matching built-in cooking surface with four cooking units.



beyond appliances to include everything from matching color counters to exactly matching paint for walls, ceiling, cabinets, and kitchen furniture.

The Textolite plastic surfacing, which resists heat, stain, and scratches, will be available in Turquoise Green, Canary Yellow, and Petal Pink. Combinations of matching colors will also be made available in several Textolite designs.

UPRIGHT FREEZERS

Two upright models are featured in the freezer line. Taking up less than a 3-ft. sq. of floor space, the deluxe upright model HU-15M holds up to 525 lbs. of frozen food, while the upright model HU-11M has a 385-lb. capacity.

Both models have light blue breaker strips and yellow convenience doors. The convenience door with chrome accent creates extra storage shelves on the inside of the freezer door, including a package-stacking shelf which lets the user see all stored foods at a glance and the juice can dispenser, which holds up to 16 cans of frozen juice, releasing them one at a time as needed.

In addition, the convenience door on the upright model HU-15M contains the ice cream conditioner, which keeps up to three ½-gal. containers of ice cream at desired scooping consistency. The HU-15M also includes a concealed light to floodlight the door and freezer interior.

The convenience door of the upright model HU-11M includes a Tilt-Stor stacking shelf which tilts outward.

Sliding trays, sliding baskets, and additional storage space for bulky foods, are included in the HU-15M.

The chest model HC-11M holds up to 389 lbs. of food. Included as standard equipment are three storage basket rails and two adjustable space dividers.

Another compact freezer, model HC-7M, holds up to 245 lbs. of food. Like the larger model, it is counter height and features thermometer temperature control, automatic interior floodlight, and two removable wire baskets.

G-E Pricing Policy--

(Concluded from Page 1, Col. 5)

said Charles K. Rieger, vice president of the company's Major Appliance Div.

"It is our feeling," Rieger continued, "that our distributors are in much better position to establish list prices than are we, being so much closer to local market conditions."

Rieger stated that it was in line with the division's policy of placing almost total flexibility, along with accompanying responsibility for marketing results, at the distributor level.

The new policy, as announced, has no bearing on General Electric's prices to its distributors. Neither does this policy involve products of the company's other divisions, such as the Small Appliance Div., the products of which are fair traded.

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READY-TO-SERVE
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ONLY 1 HOUR!**



**RITE COLD
DRY BEVERAGE COOLERS**

Room temperature bottled drinks at 8 A.M.—frosty cold, ready-to-serve at 9! Rite Cold Coolers—made by a Company specializing solely in beverage cooling equipment—actually sell themselves.

LOOK AT THESE FEATURES!

- 1 Hr. Cooling
- Economic Operation
- Easy to Clean
- Priced Right
- Dependable, Efficient
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- Any Color
- Simple Mechanism
- Handsome & Modern

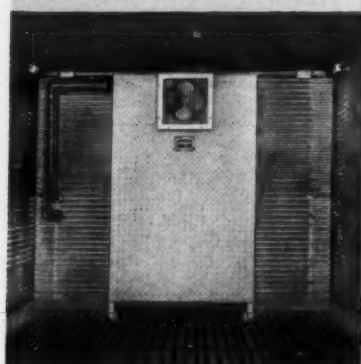
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- Any Color
- Simple Mechanism
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RITE COLD COMPANY

Dept. 101, 3546 Junata, St. Louis 18, Mo.



Mr. Bickel qualifies as an expert on air conditioning. In the fall of 1932 he signed up the first Carrier air conditioning dealers—and they were the first air conditioning dealers anywhere. Today, he heads up the dealer sales division of Carrier Corporation. In the years between, he has probably introduced more men into the exciting field of air conditioning than any other person.

What does a good air conditioning dealer need most?

by JOHN M. BICKEL

Vice President and General Sales Manager
Unitary Equipment Division, Carrier Corporation

A manufacturer pays my salary—but if you were to ask me what a good air conditioning dealer needs most, I'd have to say: a good air conditioning distributor.

The best air conditioning manufacturer in the world (and I know who that is) can't nourish and encourage a dealer the way a distributor can. When you've got a top-notch air conditioning distributor, he's on the spot when you need him. He'll help you train your men, help you dig up more business, help you close tough sales, and help you get the merchandise you need when you need it!

Maybe I'm prejudiced, but I feel Carrier has got a corner on a flock of good air conditioning distributors. These Carrier distributors have been deep in the air conditioning business for many more years than any other group of distributors—25 of them have been associated with Carrier for over 20 years. I've worked with them, I've had fun with them. And I say there isn't a finer body of men anywhere!

Your future looks good

If you can tie up with a Carrier distributor, I'd say your future looks mighty good! That's true whether you aim to start small with one product—or want to take on the whole Carrier line! Remember, when you sell Carrier you can start with Room Air Conditioners, branch out into residential Weathermakers, add the Commercial Weather-

maker line, top that by getting into the design and installation of built-up systems. You can even sell those money-making Carrier Icemakers! And your Carrier distributor will back you all the way!

You'll appreciate the fact that your Carrier distributor is located nearby and that he carries a full stock of the most complete air conditioning line in the business. He can handle your equipment orders quickly and economically. You can draw stock from his conveniently located warehouse. And, if you wish, you can even stock some of this equipment in your own place of business without any down payment!

Financing made easy

Your Carrier distributor offers his dealers four retail finance plans. Under one plan a residential air conditioner prospect pays only 10% down and pays the remainder in 36 monthly installments. Under an off-season plan, your customer needn't make his first monthly payment until May. And under another, room air conditioners can be sold with no down payment!

Your Carrier distributor has two full-fledged training programs to offer you...one on commercial air conditioning, the other on residential air conditioning. He has a Pocket-Size Weathermaker Handbook that will help you locate and close commercial jobs...and a big Question and Answer Book that's one of the reasons Carrier

ranks Number One in residential air conditioning sales throughout the U. S. A.!

Let me send you this gift

If you are interested in becoming a Carrier dealer, please write to me direct. I'd like to hear from you and I'd like to send you as a gift something which every Carrier dealer treasures—and nobody else can get his hands on! I'm talking about our fine monthly dealer magazine, "Inside Carrier." It's a very good example of the extra attention every Carrier dealer receives. Thank you.



**air conditioning
refrigeration
industrial heating**

JOHN M. BICKEL, Vice President and General Sales Manager
Unitary Equipment Division
Carrier Corporation, Syracuse, New York

Your article interests me. Please send me that copy of "Inside Carrier." And put me in touch with my nearest Carrier distributor. I'm interested in selling:

Carrier Room Air Conditioners ☐ Carrier Weathermakers for homes ☐
Carrier Weathermakers for business ☐ Carrier Icemakers ☐

Name

Street

City State

READING

THE NAME TO REMEMBER FOR

QUALITY COPPER TUBING

FOR REFRIGERATION & AIR CONDITIONING EQUIPMENT

READING TUBE CORPORATION

EMPIRE STATE BUILDING
NEW YORK 1, N. Y.
WORKS: READING, PA.

Fedders Room Air Conditioner Models--

(Concluded from Page 1, Col. 4)

It was also announced that Fedders is launching a 10-year, \$20,000,000 plant expansion program and the largest merchandising program in its history.

Sharing honors in the 1955 line are the "Deluxe" and Flexi-Mount units, both reflecting improvements in design and engineering. In Deluxe and Custom models, the circular grille has been moved to the left. Gold treatment has been added to the grille and across the bottom of the face of the unit.

One Flexi-Mount unit includes a control panel hidden behind decorative trim and opened much in the manner of similar devices on television sets.

The new Slim Lo-Boy is described as a compact, completely enclosed room air conditioner.

"This marks a departure from the window-installed unit," it was stated, "and may occupy no more space than such a window unit, regardless of whether it is installed free-standing or recessed."

Designated model 49FT, this 3/4-ton unit is 30 in. high and 12 in. deep. Available in harmonizing brown and white, the Slim Lo-Boy can be installed either free-standing on short legs or recessed into a wall.

The basic green and ivory colors available during the past season are continued in the 1955 models. Speaking before the convention

were Salvatore Giordano, president and board chairman; A. J. De Fino, vice president and general manager; and Robert E. Cassatt, sales manager of the refrigeration appliances division.

PREDICTS SWEEPING ADVANCES

Giordano predicted sweeping advances for the industry. Referring to last year's "lag" in the sale of home air conditioners and the pessimism voiced in some quarters for the future of the business, he said:

"The air conditioning industry offers one of the most amazing examples of growth in the annals of American business. True, 1954 presented some problems. However, we look to 1955 and succeeding years as highly promising, for manufacturers, distributors, and consumers. Because of recent strides in design, engineering, and merchandising methods, I look to a new era in air conditioning, with maximum advantages to the consumer."

He also told the distributors that "consumer demand for our product in 1955 will vastly exceed original expectations."

Announcing Fedders' expansion and merchandising programs, De Fino asserted: "This certainly does not look to me like there is any 'chill' on the air conditioning business." He referred to a recent

magazine article under that heading which took a pessimistic view of industry prospects for 1955.

In a filmed presentation on "The Changing American Market," Cassatt disclosed evidence that air conditioners are now being considered necessity rather than luxury items.

In a moderate income housing development in Philadelphia, Cassatt said, 20% of the homes were equipped with at least one air conditioner. This compares, he said, with the national average of 5%. Thus, the potential of the home air conditioner industry is only being scratched, Cassatt declared.

It was announced at the convention that powered by a million-dollar advertising and sales promotion budget, Fedders in 1955 will launch a concerted dealer-penetration campaign.

The campaign will concentrate on bulwarking dealer activity with service through market research studies, insertions in eight business professional publications, and daily newspapers, schedules in multi-million mass circulation weeklies and among mass circulation monthlies. Anticipated circulation of the ads would top 27,000,000 homes. Trade advertising and insertions

in classified telephone directories, as well as a nationwide publicity campaign, complete the Fedders program.

INVISIBLE ADVERTISEMENT

Most dramatic innovation in the 1955 plan will be the introduction of what is said to be "the first invisible advertisement in business history."

This "invisible advertisement" will include a large, blank white space containing a "secret message." This message—to be read "by Fedders dealers only"—can materialize only when the reader holds the magazine against a hot light bulb at which point the invisible ink becomes legible.

List prices of the 1955 models were reported as follows:

Model	Size	Price
45G	1/2 ton	\$239.95
48G	3/4 ton	289.95
411SG	1 ton	339.95
44G	1/2 ton	189.95
46G	3/4 ton	269.95
49G	3/4 ton	319.95
411G	1 ton	369.95
46MG	1/2 ton	299.95
49MG	3/4 ton	349.95
411MG	1 ton	399.95
414MG	1 1/2 ton	499.95
46CG	1/2 ton	319.95
49CG	3/4 ton	369.95
49FT	3/4 ton	399.95

Minneapolis Educational Conference--

(Concluded from Page 1, Col. 2) and a Nash, the latter featuring a "front-end" unit, each received close scrutiny.

NINE SPEAKERS PARTICIPATED

Various topics were touched upon by the nine speakers participating in the educational sessions.

Sizing and layout of refrigerant lines was reviewed by Cecil Visger; time controls for refrigeration applications by Tom Morrison of Paragon Electric Co.; use of "Freon-12" and "Freon-22" in food store equipment by John H. Spence, service manager of Hussmann Refrigeration, Inc.

Application, installation, and service of chilled water air conditioning equipment was outlined by W. B. Cooper, manager of Heating and Cooling Systems Dept., American Radiator and Standard Sanitary Corp.

Clayton Cramer of Carrier Corp.'s Service Dept. discussed reasons for compressor failures; Dr. Walter O. Walker of the University of Miami talked on "Oddities in Refrigeration"; Ray Thompson, director of Service, O. A. Sutton Corp., presented a skit portraying how not to install a window air conditioner.

Installing and servicing of farm bulk milk cooling tanks was described by Leon Buehler, chief refrigeration engineer, Creamery Package Mfg. Co., and two-way radio for service firms was demonstrated by Bernard Gest of Radio Corp. of America.

'INFORMATION PLEASE' SESSIONS

In addition to these formal talks there were the usual "Information Please" sessions.

Social events during the convention included a get-together party the first evening and the annual banquet Saturday night.

Top-flight entertainment and substantial prizes donated by individual manufacturers were crowd-pleasing features of the banquet.

Prizes for the educational sessions were presented by Air Conditioning and Refrigeration Wholesalers Association as well as Region 7 of that group.

At the final RSES business session, the society voted to (1) increase dues, (2) change its motto, and (3) revise its constitution to provide for the RSES insurance program already in operation.

Dues increase amounts to \$1 per member. Annual dues of members-at-large will now be \$8.50. Each chapter will pay \$6 per capita tax to the RSES International and be

required to charge a minimum of \$8.50 annual dues for members.

The RSES motto "We do it right" has been replaced as the result of the vote of delegates at this convention by:

"Efficient Refrigeration and Air Conditioning Service — Service Through Knowledge."

Presumably only the last three words will appear on emblems, etc.

Charles G. Bell of Fresno, Calif., as president heads the new slate of RSES officers elected for 1955.

He will be assisted by J. Marshall Lock, first vice president; William E. Tierney, second vice president; C. W. Neisel, treasurer; George R. Klahn, sergeant-at-arms; and H. T. McDermott, secretary.

Directors (term expiring 1956) chosen were James D. Nall, J. Lawrence Hall, William V. Peek, Kenneth Young, and Earl Scherer.

Directors still with a year to serve are Kelvin T. Dawson, Al Dellheim, A. E. Manning, J. C. Titus, and J. M. Turner.

John H. Spence was also re-elected as chairman of the Educational and Examining Board.

Manufacturers Service Mgrs. Club Now Has 77 Members

MINNEAPOLIS—Growth to 77 members by the Manufacturers Service Managers Club of RSES was announced at the annual meeting of the organization held during the parent society's 17th annual convention here.

"Service managers of most major manufacturers in all segments of the industry are now represented," said Paul Reed, ex officio secretary of the group's six-man executive committee.

This committee, which guides the club's efforts to cooperate in technical educational activities, is now headed by William Pollock, service manager of Temprite Products Corp. as chairman.

Other members of the executive committee are J. C. Kellner, service manager of Servel's Appliance Div.; C. S. Kessler, service manager of U. S. Air Conditioning Co.; Max Schinke, service manager of Admiral Corp.; H. F. Scheider, service manager of Delco Products Div., General Motors Corp.; and John Spence, service manager of Hussmann.

Spence is immediate past chairman of the executive committee, which was headed up the first year by Eugene Hamilton, manager of the Distributor-Service Dept. of Worthington Corp.

HERE'S WHY

PENN WATER VALVES stay on the job much longer

NO VALVE CHATTER

NO WATER HAMMER

NO RUSTING OF RANGE SPRING

NO CORROSION OF SLIDING PARTS

EASY MANUAL FLUSHING

PENN

And the Penn water valve is very sensitive to changes in refrigerant head pressures to assure highest operating efficiency. Try the Series 246 on your next refrigeration job... you'll discover it will stay on the job much longer than other water valves.

Sizes from 3/4" to 2 1/2" in flanged and threaded styles... also available for temperature actuated service. Ask your wholesaler or write Penn Controls, Inc., Goshen, Indiana. Export Division: 13 E. 40th Street, New York 16, N. Y., U.S.A. In Canada: Penn Controls Limited, Toronto, Ontario.

PENN

AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, GAS APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

Cross Over The Bridge

TO THE LAND OF PROFIT... AND PRIZES

WITH

Deepfreeze®



Here is one of the greatest
profit, and prize, opportunities
ever offered appliance dealers!

Starting November 15, 1954 and ending midnight, January 31, 1955, all Deepfreeze dealers will win valuable prizes from every Deepfreeze appliance purchase. The more you buy, the more you make.

There is no limit to the number of prizes you can win!

Over 1500 different items of America's finest merchandise...everything from furniture to fishing gear. All nationally advertised

products...Gruen, Elgin, Kodak, Revere, etc.

If you are already a Deepfreeze dealer you will soon receive the big, beautiful catalog from which to select your prizes, as well as the rules and ordering procedures for this mammoth campaign.

If you are not yet a Deepfreeze dealer, see your local Deepfreeze distributor, or write us direct. Learn how you, too, can participate in profits and prizes with Deepfreeze.

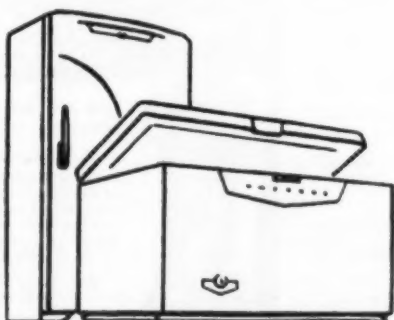
Deepfreeze®

HOME APPLIANCES

North Chicago, Illinois

Deepfreeze Home Appliances, North Chicago, Illinois. Makers of genuine Deepfreeze Home Freezers, Refrigerators, Room Air Conditioners, Electric Ranges and Water Heaters. Specifications subject to change without notice. Deepfreeze Home Appliances also sold in Canada by authorized dealers.

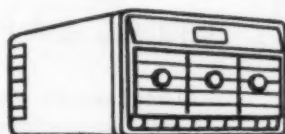
Remember! Write, wire, or phone for details today on the Deepfreeze "Cross over the Bridge" campaign



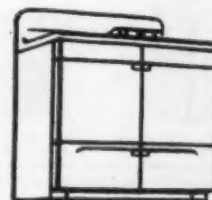
CHEST AND UPRIGHT
HOME FREEZERS



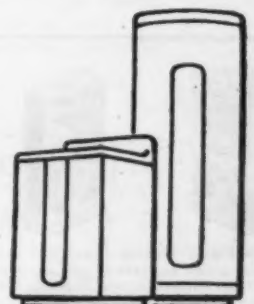
REFRIGERATORS AND
COMBINATIONS



ROOM AIR
CONDITIONERS



ELECTRIC
RANGES



ELECTRIC
WATER HEATERS

Westinghouse Introduces Appliance Line for 1955--

(Continued from Page 1)

each of which holds a pint of juice concentrate, so that either of two juices such as orange and lemonade may be drawn from the fountain.

A 2-qt. pre-cooling water tank draws a constant supply of fresh water from the household water system. The fountain operates at 15 to 125 lbs. pressure and makes use of an exclusively patented Venturi valve.

INTERIORS FEATURE ARCTIC BLUE

All seven models feature interiors of arctic blue—the inner door, breaker strips, and, for the first time in Westinghouse refrigerators, all three walls of the food liner in color. The food liner is made of Titanium steel and is finished in porcelain enamel.

Exteriors are white and feature a new chrome handle of modern design on six models, and a recessed black panel across the outer doors of the top three deluxe models. Raised gold lettering has been used for the names "Westinghouse" and "Frost Free" on the exterior and on the black panel on the fronts of the "Humidrawers."

Full width freezer compartments are in all models with capacities ranging from 73 lbs. in the two-door model to 39 lbs. in the 8-cu. ft. PH-80. A meat keeper of 18 lbs.

TWIN JUICE FOUNTAIN is new feature of Westinghouse "Frost-Free" refrigerator model DFH-122. It automatically mixes juice concentrate and water under pressure. Twin compartment will hold two juices—or powdered milk.



capacity has been provided in the four deluxe models.

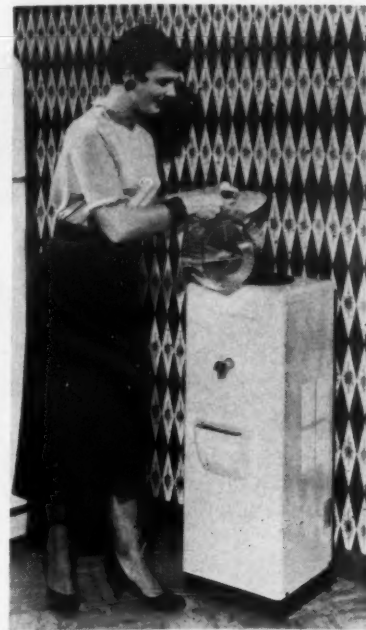
Roll-out shelves that can be removed from the refrigerators loaded and used as serving trays have been placed in the top three Frost-Free models. Adjustable shelves have been provided in the

FH-103, PH-109, and PH-90.

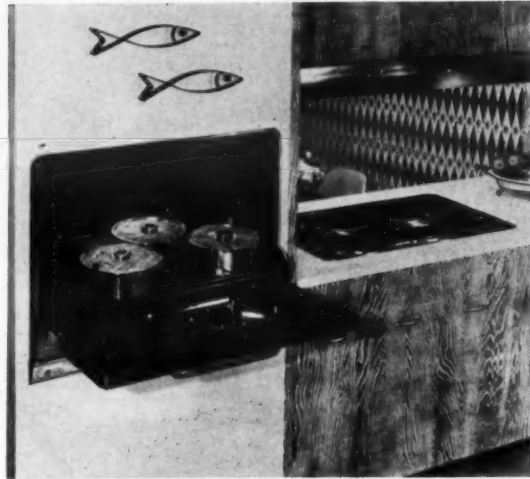
The exclusive Westinghouse "Beverage Keeper," introduced last year, is again a feature of the 12.2-cu. ft. deluxe model DFH-122. It keeps bottled or canned beverages at just above freezing temperature. Bottle storage in all



ABOVE: FULL WIDTH 30-in. oven and twin broilers is featured in three Westinghouse ranges.



RIGHT: A WATER COOLER FOR THE HOME has 1-gal. reservoir, requires no plumbing or drain connections. Pushbutton faucet is for convenience of children.



NEW WITH WESTINGHOUSE is built-in range. Oven is 24 in. wide and has "Peek-A-Boo" light. Surface unit has four detachable plug-in cooking units in stainless steel top. One unit gets hot in 30 seconds.



There's a hidden gold mine for you in Frigidaire Cleaners and Polishes!

You'll reap extra profits on every service call you make when you take along Frigidaire specially formulated Cleaners and Polishes. They make good service jobs look even better, and bring in extra sales and profits. They add a finishing touch that builds customer satisfaction, and sets the stage for "easy money" sales. Your customers will want to buy the same professional type of cleaners you use yourself!

Another related source of profit is in Frigidaire accessories—Quickube Ice Trays, Chilling and Defrosting Trays for refrigerators, Condiment Sets, Pressure Cookers and Kant-Slide Griddles for ranges.

See your Frigidaire Parts Distributor today for a supply of these proven sales-builders. Display them on your sales floor or parts counter—carry them with you on service calls and just watch those extra sales soar!



Frigidaire Cleaners and Polishes

Always specify, always use genuine precision-built Frigidaire Parts and Accessories



Frigidaire Plastic Cleaner cleans and protects white plastic surfaces as well as stainless steel and chromium, too. Prolongs life, eliminates dust-collecting static.

Frigidaire Surface Renewer—ideal for Dulux-finished refrigerators and other appliances—even automobiles and furniture. High luster, tough wax lasts for months.



Frigidaire Nu-Coat—excellent for all rubber and leather goods. Cleans and waxes refrigerator rubber door seals in one easy operation.

Frigidaire Porcelain Speed Cleaner removes stubborn stains, dirt and scorches from porcelain, tile and marble surfaces. Use for polishing and cleaning ranges, refrigerators, sinks, bathroom fixtures.



models range from 20-qt. capacity to 12-qt. capacity. Additional space is provided in the door shelves of some models.

Two vegetable Humidrawers, finished in blue porcelain enamel, with a capacity of $\frac{3}{4}$ bu., are in the top three Frost-Free models. A single Humidrawer has been provided in the other models.

All meat keepers, beverage keepers, and the Humidrawers on models having two Humidrawers are steel finished in blue porcelain enamel.

Among the features to be found in the refrigerator doors of various models are: egg keepers that tilt back to remove one egg or are removable to carry to a work surface; a bottle shelf, a 2-lb. cheese file, a butter keeper that will hold a $\frac{1}{2}$ lb., and a $\frac{1}{2}$ -bu. fruit bin.

REFRIGERATOR PRICES

Prices on the line, which will be available nationally in January, are as follows:

TFH-115 (two door) . . .	\$549.95
DFH-122 (Frost-Free) . .	499.95
DFH-106 . . .	469.95
FH-103 . . .	389.95
PH-109 (Pushbutton) . .	329.95
PH-90 . . .	279.95
PH-80 . . .	239.95

Three 40-in. electric ranges with full-width 30-in. ovens dominate the nine-model range line.

The 30-in. oven, according to R. M. Beatty, manager of the range department, has a double thickness of insulation on all sides—totaling 18 lbs.—and a Fiberglas seal around the door to provide uniform, efficient heating at a lower cost per cu. in. of oven space.

The models with 30-in. ovens are the Imperial 40 BH, the Imperial 40 BHS, and the Custom 40 CH. Other models in the line include two "Commander" double oven ranges, models AH and AHS, and, in the medium and low price range, the Champion model DH, the Commodore model EH, the Imperial 30, and the low price model HH at \$199.95.

The 30-in. oven models are also equipped with two broiler units in the top of the oven which can be used simultaneously or separately as needed. Their surface units are at the edges with the work surface in the center.

The Imperial 40 BH and Commander AH are equipped with an

automatic electronic unit that maintains the selected temperature by turning the current on and off.

Eight of the range models have full-width storage drawers. Plug-in surface units that can be unplugged for cleaning, are available on four. A 6-in. "Super Corox" unit that gets red hot in 30 seconds is on seven models.

Speed cookers, for deep well or surface cooking, are available on the Commander and Champion models. A thermostat protects them from overheating.

Look-in glass oven doors are on Imperial models. Eight ranges have "Miracle Sealed" ovens and six have "Color-Glance" surface controls. The other three have "Tel-A-Glance" controls with white lettering on black background.

New style changes include a greater use of gold or chrome in the backplashers, and black with contrasting white numerals on oven controls and clocks, some of which are trimmed in gold and others in chrome.

RANGE PRICES

Prices on the range line, which will also be available nationally in January, are:

Commander AH	\$469.95
Commander AHS	439.95
Imperial 40 BH	429.95
Imperial 40 BHS	399.95
Custom 40 CH	339.95
Imperial 30 FH	259.95
Champion DH	319.95
Commodore EH	239.95
HH	199.95

(Concluded on next page)

E-Z-SEE

LIQUID INDICATOR

NEW FLO INDICATOR FLAP SHOWS ALL FLOW CHANGES

Analyze flow, function of expansion valve, by means of E-Z to SEE sensitive flap, instantly responsive to variations in flow. Positively leak-proof—hundreds of thousands in use.

Available at Wholesalers everywhere

REMCO
INCORPORATED
ZELIENOPLE, PA.

Westinghouse Line--*(Concluded from preceding page)*

The surface cooking built-in unit scheduled for next April will provide four detachable plug-in units, one of which will be a Super Corox for fast heating. It will be priced at \$169.95.

BUILT-IN OVEN HAS OPENING THAT IS 24 IN. WIDE

The built-in oven will have a 24-in. wide opening and claims to have larger capacity than any other on the market. It will feature a glass panel in the oven door and a "Peek-A-Boo" light so the user may see inside without opening the door. It will retail for \$199.95.

The new dishwasher, which will fit the dimensions of standard base cabinets, is equipped with a thermostatic water temperature control. The temperature control delays the cycle, if incoming water is too cold, until a heater brings the water up to correct temperature.

The single dial control on the front panel makes possible a flexible washing and drying cycle. A circular indicator dial in the lower center of the front panel shows what phase of the cycle is in operation.

Swing up center sections of the top rack provide convenient loading of large pots, pans, and plates up to 11 in. in diameter.

Washing and rinsing action is controlled by an impeller with a diverter mounted directly above it. The impeller swirls the water upward and the diverter directs part of the water at an angle to assure distribution of water over every article in the dishwasher.

Capacity is 8,000 cu. in., enough to handle a dinner for eight.

Carrying a suggested retail price of \$329.95, the dishwasher DWD-24, is available immediately.

COOLERET HAS 1-GAL. RESERVOIR

From Springfield, Mass., Westinghouse introduced its home water cooler, the "Cooleret," and the low-cost dehumidifier.

Equipped with a 1-gal. reservoir, the Cooleret requires no plumbing or drain connections. By removing the lid, water can be poured into the reservoir and kept cooled by refrigeration until wanted. If large capacity is desired, spring water bottles of up to 5-gal. capacity can be used. A waste water receptacle provides for disposal.

The Cooleret occupies little more than 1 sq. ft. of floor space. It is counter high and finished in white. A pushbutton, operating the faucet, has been placed on the front of the cooler for the convenience of children.

With a suggested list price of \$149.95, the Cooleret will be available in January. A silver-gray model is designed for office use.

Earl Hartley, manager of water coolers and dehumidifiers, announced that the present line of 13 water coolers for commercial and industrial application will be continued with redesigned exteriors and lower prices ranging from \$230.70 to \$397.35.

DEHUMIDIFIERS

The new dehumidifier, model H-4A, uses the Westinghouse air drying coil of bare copper and can remove 3 gals. of water from 10,000 cu. ft. of enclosed space every 24 hours.

Styled in Desert Gray, the new dehumidifier is mounted on casters and has a built-in container to collect water. When the container is removed, a special drain trap swings into place to prevent water from dripping on the floor. As an accessory, an automatic timer is available.

Retail price for the H-4A will be \$129.95.

Also continued in the 1955 line is model HR-4A, introduced earlier this year, which is equipped with a 1,325-watt heating element. It can be used as a room heater when the humid season has passed.

INSIDE DOPE

Learn to live and laugh—
Thus delay your epitaph

By **GEORGE F. TAUBENECK**

(Concluded from Page 1, Col. 1)

Our people like the American attitude of unselfishness, and admire the way you do things."

Q.: "How do your East German brethren feel about the unity problem?"

A.: "As of now 95% of them yearn to join the Western coalition against Communism. However, time is on Russia's side. Communist teachings entrap youths and poison their minds."

Q.: "How do German citizens react to American Occupation soldiers?"

A.: "They're the best. Gentle-

men, they are. Much better than the British and French, and incomparably less odious than the Russians."

We should add that these German editors were mighty fine, decent gentlemen themselves.

Romney Has a Sturdy Background

On a leisurely (but business-like) trip around the world, Dope acquired an immense respect for Mormon missionaries. They're college-age young men. They pay their own way—earning their livelihood by getting jobs in the foreign countries to which they have been sent. For two years they're on their own "over there." And they recruit new members for their Faith by persuading while working.

In Hawaii, South Pacific islands, New Zealand, Australia, and Indonesia, Dope encountered dedicated young Mormon missionaries who were doing a lot of good—advanc-

ing their religious faith—and acquiring tremendous forensic polish. We admired them immensely.

Probably the toughest assignment for a Utah boy-missionary is England. That's where George Romney was sent. In London's Hyde Park the competition for speaking attention is terrific. But George drew audiences. In that rough-and-tumble heckling game he won the self-confidence that American Motors people admire so much. Understandably, nothing scares him now—not even the tremendous job which faces him.

True, the late George Mason's square-toed brogans are hard to fill. But don't sell Romney short. He's a tested competitor—ready and eager to fight in a really rough league. Kelvinator dealers please note.

We Shouldda Stood In Bed

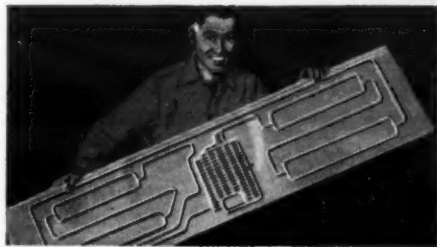
Haven't we all experienced days like these?

"Some days are born ugly. From the very first light they are no damn good whatever the weather, and everybody knows it. No one knows what causes this, but on such a day people resist getting out of bed and set their heels against the day. When they are finally forced out by hunger or job they find that the day is just as lousy as they knew it would be.

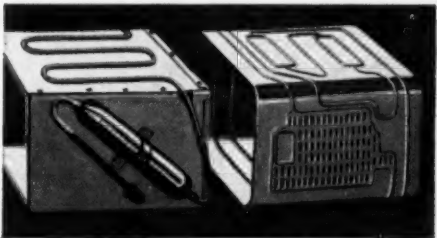
*** On such a day it is impossible to make a good cup of coffee, shoe-strings break, cups leap from the shelf by themselves and shatter on the floor, children ordinarily honest tell lies, and children ordinarily good unscrew the tap handles of the gas range and lose the screws and have to be spanked. This is the day the cat chooses to have kittens and house-broken dogs wet on the parlor rug.*** Oh, it's awful on such a day! The postman brings overdue bills. If it's a sunny day it is too damn sunny, and if it is dark who can stand it?"—JOHN STEINBECK in his latest novel, *Sweet Thursday*.

WESTERN Roll-Bond PROCESS

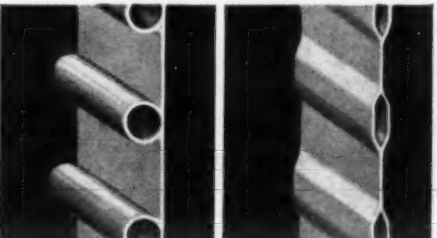
offers the greatest advance in Refrigeration since the Drip Pan left the kitchen!



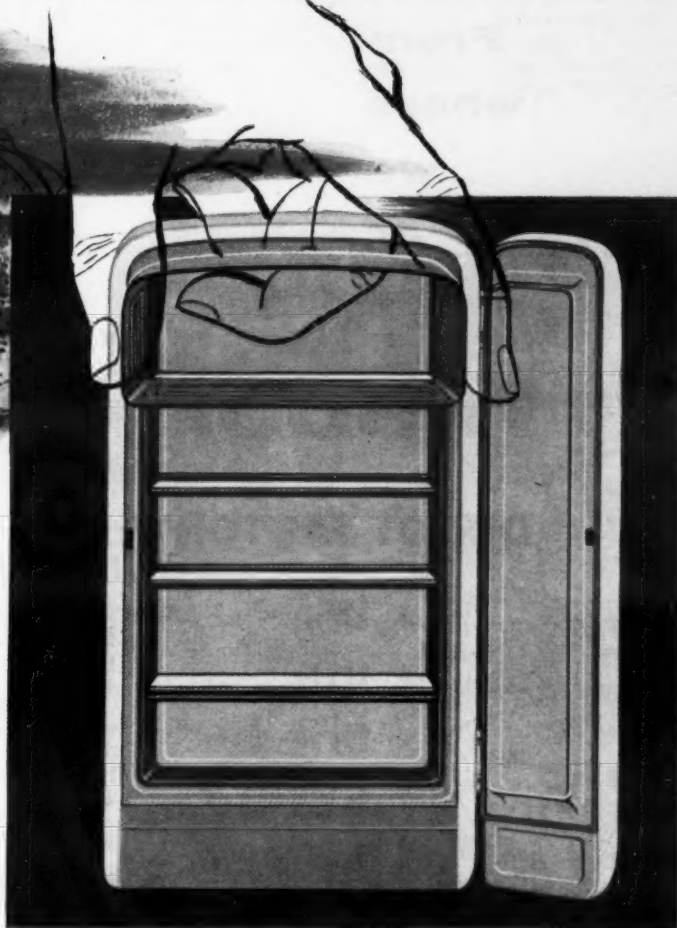
The tubing—scientifically designed for shape and volume in practically any pattern you can put on paper—is inside the single aluminum sheet. All problems of brazing and leakage are eliminated. A complete redesign of your tubing pattern costs less than \$50.00, takes but a very few days instead of months and does away with expensive dies and presses.



All other evaporators require separate accumulators which must be produced and attached at additional cost. They must be brazed into the system and need at least two joints. With the new Western Roll Bond Process, the waffle pattern accumulator illustrated is part of the plate and is furnished at no extra cost. Leakage and brazing are eliminated.



For automatic defrosting, the surface of a Western Roll Bond evaporator is entirely free of voids and pockets. This eliminates any possibility of moisture collecting and causing "frost blisters" that separate the tubing from the wall.



Right now, evaporators made by the new Western Roll Bond Patented Process are being used by one of America's leading refrigerator manufacturers. Already, in over 300,000 homes, the Western Roll Bond evaporator is proving its superiority over the old-fashioned brazed tube type. The Western Roll Bond evaporator transfers heat so efficiently that a substantial reduction in the amount of refrigerant used is possible.

So revolutionary is this process that wherever your operations now call for heat exchangers of any type or for any purpose, Western Roll Bond offers a more efficient, a more economical answer. This completely new era of refrigeration design already is an assembly line reality. Now is the time to begin a serious investigation of what this Western Roll Bond Process can offer your own firm. Your inquiries are invited.

WESTERN Roll-Bond
a product of
metals division

OLIN MATHIESON CHEMICAL CORPORATION
Plants • East Alton, Ill.—New Haven, Conn.

MAKING YOUR ADVERTISING DOLLAR WORK

SYRACUSE, N. Y.—“Advertising will represent one of my biggest capital investments next year,” said Bill Peine, president of Indiana Weathermakers, Indianapolis, “so I’m anxious to learn all I can do about it.”

This statement seemed typical of the attitude of the 127 who attended the Advertising Workshop sponsored by the Carrier Corp. advertising and sales promotion department in a four-day program here recently.

The workshop, a lecture-discussion type conference was made up of advertising managers, sales managers in charge of advertising, Carrier field merchandising specialists, and representatives of the local advertising agencies that serve Carrier distributors.

In addition to these, 17 distributors themselves or their representatives attended the advertising conference.

Four general topics made up the bulk of discussion during the four-day meeting:

How do you go about building an advertising program?

Is direct mail finding prospects for your salesmen?

What are the best advertising media for you?

Do you want to double the effectiveness of your firm’s advertising?

How To Build an Advertising Program with a Budget

Suggestions for building an advertising program were presented by Carrier Advertising Manager Ken Ray. “There’s only one way to make advertising dollars pay off and that is to budget your campaigns a year in advance and program your activity on a calendar.”

“Building a budget is pick-and-shovel work,” Ray commented, “but it pays off. If you try to duck it, you are just kidding yourself. However, the expense budget is only half the job. The other half is timing the expenses—making a calendar program you can follow religiously throughout the year. A calendar program not only helps you build the budget, it helps you intelligently spend the money in an orderly, well-organized way.”

“How do you start to build a budget? Start with the products you sell and fit them to the territory you serve,” suggested Ray. “The Carrier business research department has already done the spade work on logical markets for all dealer products,” he pointed out. “For example, business research tells you just where you can expect to sell 50K Weathermakers, what percent all Carrier

dealers are selling to drugstores, banks, etc. With this data, the next step is to find out how many of these different classes of markets are in your territory, for each product, and how many prospects in each class.”

Ray advised distributors and dealers to study intensively their own local situation. He urged use of the Hearst Consumer Trading Area maps for over-all information and consultation with local newspaper advertising departments for more detailed data.

Suggested “best bets” for advertising were classified telephone directory listings for all products and mass media (newspapers, radio, TV, billboard) for room air conditioners and residential equipment.

At this point, Ray warned: “Sales contests, sales training, sales meeting expenses, incentive programs for salesmen—all that sort of thing—should not be included in the advertising and promotion budget. If you include sales incentive expense in your advertising budget, truly advertising items may have to be omitted or restricted in use and your advertising program will not be strong

enough to do the job that must be done. This kind of sales expense belongs in the sales budget.

“Many an advertising man is tempted to start with some sales percentage ratio representing what he thinks he can afford to spend on advertising. Then he works backward to determine how much of a program his money will buy. That is the wrong way.”

Ray told his audience that the right way is to “begin at the beginning, and include everything. If you are a dealer, that means starting with your place of business. Does your store front have a new Carrier electric sign, and are the windows properly decorated with decals? These are must items which identify your place of business with a nationally advertised brand.

“Next, how do things shape up inside your store? Here you will need literature for salesmen and prospects, equipment display stands, banners, and so on. They must be budgeted. After you have checked over the advertising and promotion needs of the store, start to think about positive methods of getting prospects into it.

“At the head of the list is the classified telephone book. You will need bold face listing, to go under the Carrier trademark, for each product you handle.

“Next, put into your budget all of the mass media expenses—newspaper space, radio and TV time, billboard rentals. And don’t forget preparation costs and ad mats. Then figure out your direct

mail programs—how many you will need, approximate costs of materials and postage, and timing. Finally, look over home show and trade show possibilities, and budget each one you want to enter. Your figures here should include booth costs, decoration expense, and equipment moving expenses.”

After all the items are listed invariably the whole program is too much to handle so it must be cut to fit.

“Dealers may wonder just what they should spend of their sales income, on advertising and promotion. Ray advises: “Dealers should figure that between 8 and 10% of retail sales must be spent on advertising to cultivate room air conditioner business properly. The same percentage holds for ice makers. A flat 8% is right for the residential line, and about 5% for Weathermakers and applied equipment. These are total amounts that should be spent each year to gain sufficient impact on consumers in any one area.”

Using Ray’s percentages, and working them out in a typical case, it is apparent that a retail dealer who expects to sell \$40,000 worth of room units should figure to spend a minimum of \$1,600 of his own money for advertising and promotion. In addition to this sum he will have some direct cash help in the form of cooperative advertising money to add to his budget, plus national advertising which will circulate in his territory. The value of all this together should equal not less than \$3,200 in this particular case.

Is Direct Mail Finding Prospects For Your Salesmen?

The difference between good direct mail and poor direct mail is in the plan, Carrier Advertising Director Les Beals advised. Using the analogy of a rifle as the best way to bag game, he said, “Direct mail works best when you can ‘shoot’ it at a better-than-average target.

“Once you are able to see that target—once you know what kind of people your prospects are—you can usually make direct mail pay better than any other type of advertising.

“Is it profitable to attempt to ferret out room air conditioner prospects by mail?” he asked. “With few exceptions, we don’t think so. No one knows where your sales will come from. Everyone is a prospect. So the rifle of direct mail is probably not as good as the shotgun of mass media. The reverse is true of 50K’s, ice-makers, and installed air conditioning systems, however. Here your market is selective. Names and addresses of prospects are available in your classified telephone book and elsewhere. You can afford a higher cost-per-reader because there is no waste circulation.

“In our opinion, direct mail also has a place in the promotion of residential air conditioners. Mailings to homeowners, architects, and builders have been and will continue to be productive. But by and large, this use of direct mail should be considered secondary support.”

Planning begins by knowing what you want direct mailings to do.

“Do you want permission to have a salesman call?” Beals asked. “Then offer some inducement to bring the interview about. Maybe this inducement is an offer to provide information on a better way to air condition. Or a booklet of value. Or merely helpful advice on how to get more for his money. The point is: you must bait your approach with some device to inspire action, or nothing will happen.”

Planning also involves thoughtful consideration of other items, according to the speaker. The right lists represent 70% of the ultimate success of a mailing, selection of the proper direct mail

material is vital, and the employment of a competent letter shop to keep the program on the track is a must.

In connection with this, Beals advised setting up a timetable based on such factors as the best time of year to get action (“you can’t sell straw hats in the winter”), coordination with dates of national advertising (“two selling forces working with you are better than one”), and the number and frequency of mailings. Beals further suggested that no more pieces be mailed than salesmen have time to follow up. A few a day will pull better if salesmen are behind them than a thousand a day without the proper follow-through.

Importance of record-keeping was also pointed out. “Did your campaign succeed or fail? How many sales were your mailings instrumental in closing? What was your cost per inquiry?” he inquired.

“You won’t know the answers if you don’t keep records—and you had better know the answers if you invest in direct mail,” Beals concluded.

Dalton Fox, advertising manager of Temperature Control, Detroit, followed Beals and commented, “The main job of direct mail today is to supply salesmen with good leads that allow them to spend their time negotiating sales instead of canvassing for leads. And the best time to use direct mail is when you need it most—during an off season.

“A 1% return in January may do a dealer more good than a 4% return in July.”

(Concluded on next page)

From
where
we
sit,
the

TYPHOON DIRECT FACTORY DEAL

is
the
finest
set-up
in
the
business

ON-THE-SPOT DISTRICT MANAGER

always ready to
iron out your
toughest problems.

LOCAL TRAINING SCHOOLS

right in your own
territory to give
you the latest
on engineering
and selling.

FACTORY COOPERATION

right on up to
the President! No
other company
works so closely
with you!

GREAT ENGINEERING

means your sales
will stick. Finest
quality components.
Fewer service
headaches.

Pull up
your
chair

TYPHOON AIR CONDITIONING

- Commercial Air Conditioners
- Residential Year-Round Units
- Home Conversion Units
- Room Air Conditioners
- Packaged Heat Pumps

TYPHOON AIR CONDITIONING CO., INC.

505 Carroll Street,
Brooklyn 15, N. Y.

Typhoon Air Conditioning Co., Inc. 413
505 Carroll St., Brooklyn 15, N. Y.

I would like to know more about the
Typhoon Franchise.

Name _____

Firm _____

Address _____

City _____ Zone _____ State _____

What Is Best Media for Your Area and Type of Operation?

"Advertising is artillery that softens up a distant and often unseen target. Sales promotion is the small arms with which you grapple hand to hand," Carrier Copy Chief Ben Eastman summarized.

"The most common form of sales promotion is printed literature," he told his audience. "This printed literature takes many forms, each especially designed for the job it is supposed to do. To be most effective, however, each type of literature should be used for the purpose for which it was intended.

"A market catalog, for example, should be given to the prospect who still must be sold on the merits of air conditioning as a commodity. On the other hand, such a piece should not be given to the man who knows he wants air conditioning and is only concerned with which brand to buy. That is the place for a product catalog or folder.

"Specification sheets are another area in which confusion in the use of literature exists. Judging by the millions dealers order, we suspect that spec sheets are being used as sales literature. It is hard for us to understand how a spec sheet at 1 cent can compare in effectiveness with a six-page, two-color product folder at two cents," Eastman said.

On the subject of dealers producing their own material, Eastman advised, "There are three genuine situations, however, when you or your dealers should produce your own materials. These he defined as unusual local conditions, special experimental campaigns, and the need for taking advantage of special timing or events.

Merchandising national advertising locally is the way to make it pay off for you, Carrier Assistant Sales Promotion Manager Bob McMahon told his workshop audience, and "getting more mileage out of advertising is a prime necessity" to meeting competition in a tough selling situation.

"Effective merchandising of advertising requires energy and imagination on the part of the dealer in order to milk the most out of the national theme. The dealer's own place of business is the place to start the process," he suggested. "Reprints of national advertising, product strips, and 'as advertised' posters should be displayed on the glass or in the background of the store window. The store interior should get the same treatment—with easel cards near the product, a blow-up of a national advertisement on the wall

and literature always within easy reach.

"Reprints of national advertisements can effectively be used as direct mail pieces by attaching a short note saying 'I thought you would be interested in reading this if you haven't already seen it. When can you and I get together to discuss your problem?'" McMahon suggested.

Other places he suggested as natural spots for the merchandising of national advertising were banks and public utility lobbies, providing the exhibit is timed with the appearance of national advertising. But here, as elsewhere, display and posters near the equipment are the things that do the trick.

These tie-in windows are also possible in department stores in addition to larger appliance outlets.

McMahon illustrated how these might be dramatized by using 1954 Carrier themes. "The Slim Silhouette Room Air Conditioner," for example provided endless opportunities in connection with fashion shows and windows, as well as furniture displays. The 50K "Look Under the Hood" theme had much the same merchandising possibilities, with gay-colored ribbons running from features to small descriptive display cards. Does all of this pay? he asked. "Look about you at other big-selling appliance names—and you will answer your own question."

Account executive of Carrier's advertising agency, N. W. Ayer & Son, Jack Bozarth, told how to pick a media winner. Each form of advertising has its own virtues; know what they are before you spend your money, he further advised.

In buying newspaper space, he urged that these considerations be kept in mind: average Audit Bureau of Circulation figures, how much of this is home delivered, and the percentage of families in the market covered. A "plus" that comes with newspaper advertising is the free merchandising services most papers offer. The wise dealer will find out what they are, and then ask for them. They are not offered otherwise."

Commenting on radio advertising, he says, "The two most important things a radio advertiser should know about a station are the area it covers (maps are available from the station) and the ratings of both the station in general and the particular periods he has in mind. Radio has demonstrated a special effectiveness for

special offers, give-aways, and pulling inquiries."

Increasingly important is television in the current advertising picture.

"However, television comes very high, with preparation costs often equalling or exceeding the heavy time costs. Good spots are at a tremendous premium," McMahon added.

"Carrier offers expertly prepared trailers for the prospective TV advertiser, but the chances are that the many more primary demands of a limited advertising

budget may eliminate TV for you right now."

In dealing with local media, Bozarth offered a suggestion that should help any dealer get maximum mileage from his advertising dollar: "Treat media representatives as important people. See representatives of as many media as possible, and maintain a contact even with papers and stations you are not currently buying from.

"There's no telling when they may be in a position to help you materially with the placing of publicity, if for no other reason."

How To Double Effectiveness Of Your Advertising

"Newspaper, radio, and television publicity can double the impact of your advertising," Jack Barnes, director of public relations for Carrier, said. Barnes and his assistants, Curt Barnard and Joe Ruffner showed how during the past 12 months a flood of publicity has been directed at the nation's newspapers, magazines, radio, and television.

"Here is our kit program for 1955. In December we will send out a package for local use on our national new products press conference. In February, we will mail the annual kit of materials for special home building sections and air conditioning supplements—the kit which has been our biggest success in the past. In addition, there will be a special kit on room units. In March you will receive what we call our 'women's interest' kit, supplying women's page copy. April will bring our industry round-up kit. Then later in the year you will get a National Home

Week kit, plus one or two more on subjects to be announced. In addition, there will be continuous mailings of spot news stories."

But publicity kits is not the only way public relations is helping dealers double the impact of their advertising dollars. Weathermaker home openings are still getting editorial, radio, and TV treatment, with Ruffner directly assisting distributors and dealers. Ruffner issued a gentle chiding, "We cannot give you the kind of help you need if you fail to mail us a Weathermaker Home Fact Sheet."

On still another front, public relations is preparing a new booklet called "Meet Your Editors." In it is packed a wealth of information on how to get stories to working newsmen so they will get printed or aired. Much material came directly from leading managing and city editors themselves, who were interviewed expressly for the advice they could give dealers.

Admiral Multi-Million Dollar Advertising Program Gets Underway

CHICAGO — Admiral Corp.'s 1955 advertising program will be the most ambitious and comprehensive in the company's history, according to Edmond I. Eger, vice president-advertising.

In 1955 Admiral will spend \$1,500,000 on national newspaper advertising and \$1,600,000 on a "Super Co-op" newspaper program, Eger said. In addition, a concentrated program of national magazine advertising is also planned.

The national newspaper advertising schedule will consist of 13 full-page advertisements to run in each of the company's 90 distributors' home city throughout the year, according to Eger. The Super Co-op campaign calls for 39 insertions in newspapers in primary and secondary markets.

Admiral's magazine advertising in 1955 will be concentrated in three weeklies, *Life*, *Look*, and *The Saturday Evening Post*, according to Eger. The magazine schedule will consist of a total of 13 double-page spreads in each magazine, or a total of 39 double spreads.

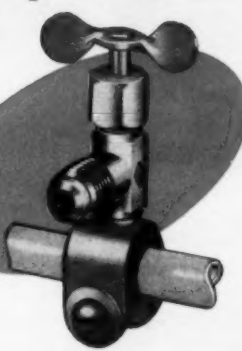
Six spreads will be in black and white and seven in full color. Both television receivers and appliances will be featured in the magazine advertising.

Admiral also has earmarked a considerable portion of its 1955 advertising budget for the sponsorship of its weekly award-winning "Life Is Worth Living" featuring Bishop Fulton J. Sheen.

4 NEW IMPERIAL TIME SAVERS ...that will ease your work!

IMPERIAL HERMETIC PIERCING VALVE

Taps line at any point. One valve can be used on 3 sizes of tubing — 1/4", 5/16", or 3/8" O.D. It is not necessary to have a separate valve for each size. Provides economical way to charge, test or purge hermetically sealed units. Double lead thread assures fast operation. No. 340-C Hermetic Piercing Valve, Each \$1.95



IMPERIAL TAP-A-CAN Refrigerant Dispensing Valve for Cherg-A-Can



Pierces can—provides positive shut-off. Double lead thread on valve provides faster operation. Has new easy grip handle. Permits dispensing any part of refrigerant and saving the rest. Large piercing needle gives greater flow. Valve can be removed and used again. No. 330-C TAP-A-CAN Valve, 1/4" flare connection. Each \$1.30



IMPERIAL BULK CHARGING HOSE & ATTACHABLE FITTINGS

You can make up your own charging lines to any length needed with the type of end fitting you want. Fittings easily and quickly attached to hose. More economical than "ready made" lines. Fittings are reusable. Charging hose has neoprene lining with strong braided fabric body and Buna N cover. Attachable fittings include Kwik-Kuplers, flare swivel nuts, male flare connectors and male pipe thread connectors.

IMPERIAL DOUBLE FLARING TOOL for Automobile Air Conditioning Systems



The double flare is the recommended type of flare for automotive air conditioning work. This new tool makes approved double flares on 6 sizes of tubing — including all sizes used in this service. Double flares assure tighter joints, greater vibration resistance and better reconnection qualities. Furnished in metal kit. No. 195-FB double flares 1/4", 5/16", 3/8", 1/2", 5/8", 3/4" O.D. tubing. Each \$24.95

SEE YOUR JOBBER . . . Ask for Bulletin 113-REF

THE IMPERIAL BRASS MFG. CO., 534 S. Racine Ave., Chicago 7, Ill.
In Canada: 334 Lauder Ave., Toronto, Ontario

IMPERIAL

FITTINGS • VALVES • DRIERS • CHARGING LINES • TOOLS for Cutting, Flaring, Bending, Pinch-Off, Swedging, Refacing.

KRAMER SMALL Curvette

Extremely compact without a cubic inch of wasted space. Designed for REACH-IN REFRIGERATORS, BEVERAGE COOLERS, BACK BARS, etc. 800 to 5,600 BTU/HR.

WRITE FOR BULLETIN C-192

KRAMER TRENTON CO. • Trenton 5, N.J.



Trade Mark registered U. S. Patent Office; Est. 1926.

F. M. COCKRELL, Founder

'The Conscience of the Industry'

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NOVEMBER 29, 1954

God Bless Indiana In Our Individualistic Union

During a routine broadcast, Arthur Godfrey recommended that his loyal adherents implore their Congressmen to vote for additional aid to public schools. His suggestion brought a quick (and probably unexpected) reaction from the Indiana Parent-Teachers Association.

These wonderful people advised Godfrey to tell "the other side" of Federal subsidies.

He did so gallantly. This fast reaction is just one result of the extraordinary, praiseworthy revolt in Indiana against Federal handouts.

William H. Book, executive vice president of the Indianapolis Chamber of Commerce, declares that Indiana's revulsion against the Washington octopus was born in the early days of World War II. Instead of exerting political pressure to locate army camps and defense plants in Indiana, the Chamber decided Indianapolis would be better off if these projects were placed where they could do the most good for national defense.

About the same time, Book points out, Indianapolis adopted a similar view regarding Federal slum-clearance aid.

Indianapolis has turned down \$2.5 million in Housing and Home Finance Agency funds offered for this purpose. Instead of accepting this aid, Indianapolis paid its own way through personal property taxes. Of \$1.9 million collected locally since 1946 for slum clearance, this progressive city has spent \$1.7 million.

In another anti-aid action, Indiana citizens figured that the district office of the U. S. Department of Commerce was duplicating many of the Chamber's services and, therefore, should be closed. It was—at a reported annual saving of \$50,000. Again:

A "pork" Congressional bill would have provided \$1.5 million

They'll Do It Every Time Jimmy Hatlo



for Indiana flood control projects. Joined by its mayor, the Indianapolis Chamber fought the bill successfully. Observed the mayor: "We are not threatened by floods."

Also the Indiana legislature challenged the Federal law banning the publicizing of names of welfare donors. It did so at the risk of forfeiting \$20 million yearly from Federal welfare grants.

Indiana didn't lose its grants, despite the Legislature's defiance. Hurriedly Congress permitted disclosure of names on the Relief Rolls. In that same year, Indiana's Parent-Teachers Association launched its vigorously waged campaign of resistance to Federal School Aid. Retaliatorily, 32 local schools were cut off from the Federal school lunch program.

"We see no point in sending our tax dollars to Washington to be returned to us with strings attached and dictation of how our schools will be run," an Indiana mother who was a Committee Chairman reported, nevertheless.

This Indiana rebellion against excessive Federal taxation spread to the small town of Lawrence, in that state, where a group of citizens attempted to reject HHFA funds. That Washington agency offered Lawrence a grant of \$124,800 and a loan of \$56,000 to expand its water system.

Protesting that this would be "squandering the taxpayers' money," the Lawrence taxpayers claimed that the Indianapolis Water Co. could furnish municipal water cheaper than the proposed new plant.

"We want to see smaller Federal budgets and lower taxes," they testified. "A large part of the high cost of Federal Government results from various aid programs. So we think one of the first steps a community can take is to oppose handouts, including those to their own locality."



Fahnestock, Inc.
346 N. Water
Wichita 2, Kan.

Editor:

Enjoyed your Wichita article and would appreciate receiving a couple of spare tear sheets.

While I am asking for favors I might just as well get it all done at once. Your method of computation, i.e. your differentiation between speculative builders and projects causes some confusion in the mind of certain manufacturers. As far as G-E is concerned they divide their figures between 1. existing construction, 2. privately built homes, 3. speculative construction, which includes projects.

Actually your recapitulation showing only 12 air conditioners in projects isn't exactly a true picture as far as we are concerned and I believe it is only because of terminology difference. We consider any multiple construction as a project. Also, a man can build one or 500 houses for speculative sale and be called a speculative builder.

All this just boils down to the fact that I just wondered why you make the split between projects and new construction rather than between new construction built for a specific owner and speculative construction.

E. G. FAHNESTOCK

Answer:

Your question about our differentiation between "existing," "new," and "project" type homes in the air conditioning survey is a good one.

In talking to you and the other dealers in the Wichita and subsequent surveys (Fort Worth and Memphis) I was seeking to distinguish between (1) the new home built either to order or on a speculative basis where the home buyer made the decision to install air conditioning and (2) the new home which was equipped with air conditioning by the speculative builder before he had even a prospective buyer.

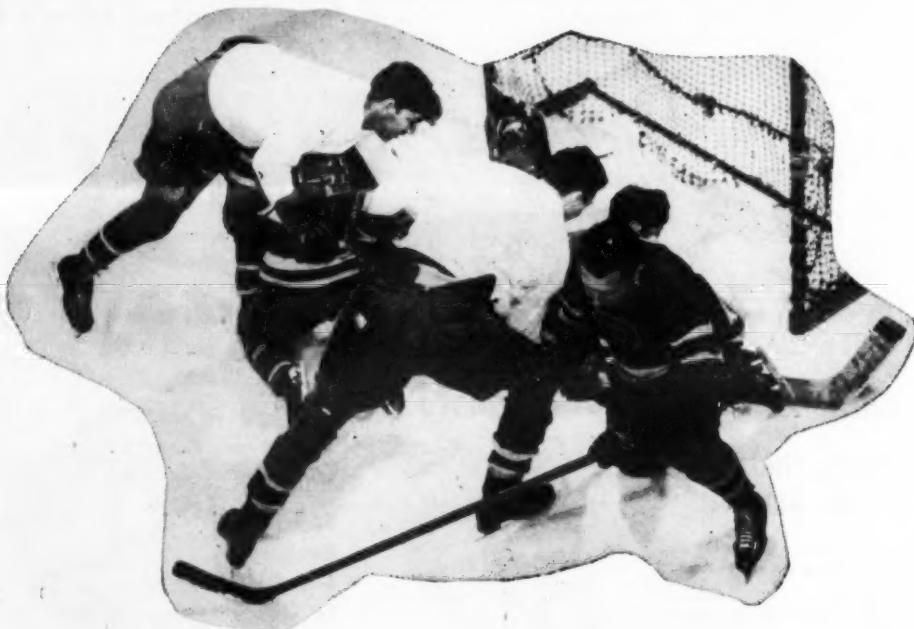
To our thinking the distinction is quite important.

There has been much talk about how the speculative home builder is promoting residential air conditioning. The fact that many of them now offer air conditioning as optional equipment does help promote it, I'll be the first to admit. But I'm trying to find out how many of these builders are actually buying air conditioning on a speculative basis or are merely offering it to buyers.

The difference could have a considerable effect on both the contractor and the manufacturer, not to mention the public.

C. DALE MERICLE,
Associate Editor

In air conditioning and refrigeration . . .



Goal!

Hockey players sitting in the "penalty box" are out of the game. They open the way for the other team to hit hard and score goals.

And so in advertising! Hitting hard where and when it counts pays off in advertising, too!

A publication may have an impressive "circulation statement" and yet contain a potent joker: how many of its "subscribers" are actively in the game . . . and how many are not?

Every subscriber to "The NEWS" is actively in the game. He is a PAID subscriber . . . he pays in cash the highest subscription price of all publications in the air conditioning and refrigeration field.

He reads "The NEWS" . . . he is in the game!

He will read your advertising in "The NEWS" . . . it will hit where it counts. It will score!

The "goal scoring" publication for air conditioning, commercial refrigeration, household refrigeration, freezers, component parts and materials.

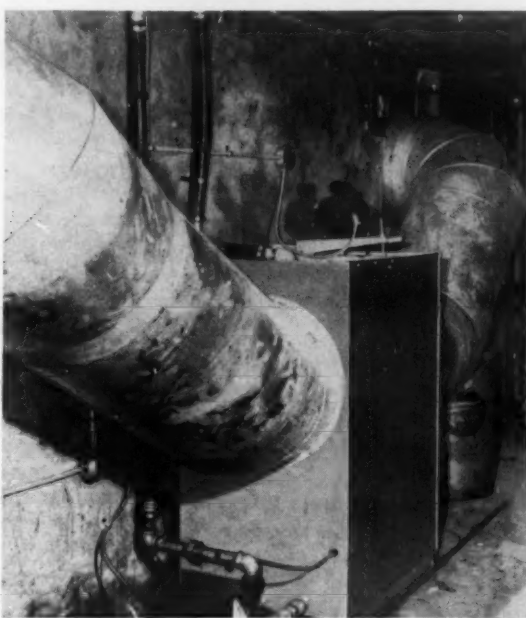


450 W. Fort St., Detroit 26, Michigan

Offices: 521 Fifth Ave., New York 17; 134 S. LaSalle St., Chicago 3; Commercial Bank Bldg., Berea, Ohio



TWO 1 1/2-in. diameter plastic pipe lines are attached to York air conditioning unit. Note connections at base of unit. A combination of metal and plastic fittings was used.



HERE IS Marley-54 cooling tower in Columbus restaurant air conditioning system. Note two lines of black plastic pipe running up wall in background. Cooling tower and air conditioning unit are in basement of restaurant.

Revolution In Cold Water Circulation?

Plastic Pipe Proves To Be Labor Saver In Columbus Where It Has Been Approved

COLUMBUS, Ohio—Plastic pipe might well revolutionize cold water circulation lines to cooling towers in air conditioning systems, in the opinion of Julius Luikart, service manager, Columbus Refrigeration Co., a refrigeration contractor.

This concern's first experience with plastic pipe proved highly successful, Luikart says. The job was an air conditioning system in a restaurant, Jack Horner's Corner, 3003 N. High St., also of Columbus. It came late in the summer, following the Columbus Building Commission's approval of plastic pipe for air conditioning applications under the City Building Code, Aug. 17.

"The light weight and flexibility of plastic pipe proved a tremendous labor-saver," Luikart said. "And the system has operated efficiently since it was installed. Water lines between the cooling tower and air conditioning unit were fairly short and straight on this job. Plastic pipe might be even more advantageous where the lines are longer with more bends."

Some 80 ft. of Yardley plastic pipe were installed in this installation. Yardley Plastics Co., a Columbus concern, is one of the largest producers of plastic pipe. The specific type used in this job was 75-lb. PressuRated polyethylene, 1 1/2-in. diameter.

Polyethylene is the commonest flexible type of plastic pipe. Approximately 95% of plastic pipe for cold water applications is polyethylene.

Yardley claims to be the first manufacturer in the country to ap-

ply specific pressure ratings to its pipe. The firm markets 75-lb., 100-lb., and 125-lb. under its trade name "PressuRated."

Two lines, approximately 40 ft. each way between the air conditioner and cooling tower, were installed in the restaurant job. There are eight fittings in the entire system. Normal working pressure of the water is about 20 lbs. Total head loss, including elevation, in the system is 41.26 ft.

Special hard plastic fittings, particularly insert thread adapters, make a simple matter of coupling plastic-to-plastic or plastic-to-metal pipe. Luikart solved one problem easily with a combination of metal and plastic fittings.

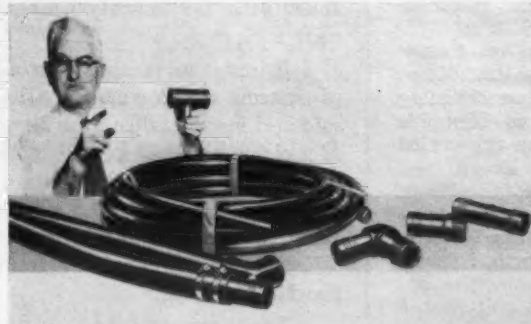
Inlet and outlet connections on the condensing unit are 3/4-in., while the plastic pipe is 1 1/2-in. A metal bell reducer compensated for this difference in pipe diameters. A plastic insert thread adapter completed coupling of the plastic pipe to the reducer, giving a snug, air-tight connection.

The air conditioning unit is a York model 552-B. The cooling tower is a Marley "54." A 1/2-hp. Weiman pump, model 5AC, circulates the water between the air unit and cooling tower.

Circulation requirement for this particular system is 3 g.p.m. per ton. "Freon-22" is the refrigerant.

There is approximately a 10° split in water temperature range between the air conditioning unit and cooling tower. Water leaves the air conditioner at about 95° F., is cooler through the tower, and returns at approximately 85° F.

Service & Supplies



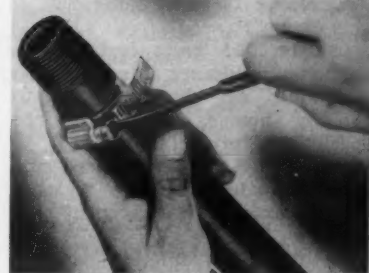
LEFT: Plastic pipe comes in sizes 1/2-in. through 6 in., in lengths to 400 ft., and there's a complete range of plastic fittings. The fittings are hard plastic, while the pipe is flexible.

BELOW: Rigid plastic insert thread adapter is secured to flexible plastic pipe by means of a stainless steel ring clamp.

One suggestion he pointed out was that lateral lines (suspended along overhead, for instance) must be well-anchored to pass building inspection. Since the pipe is flexible, it must be "buttoned down" securely to keep it from "jumping" when water pressure is applied.

Luikart said he and his crew were so well-impressed with the ease of handling plastic pipe, his firm plans to use it exclusively for this specific application when stocks of galvanized pipe are depleted.

He explained that since plastic pipe comes in coils, it requires less



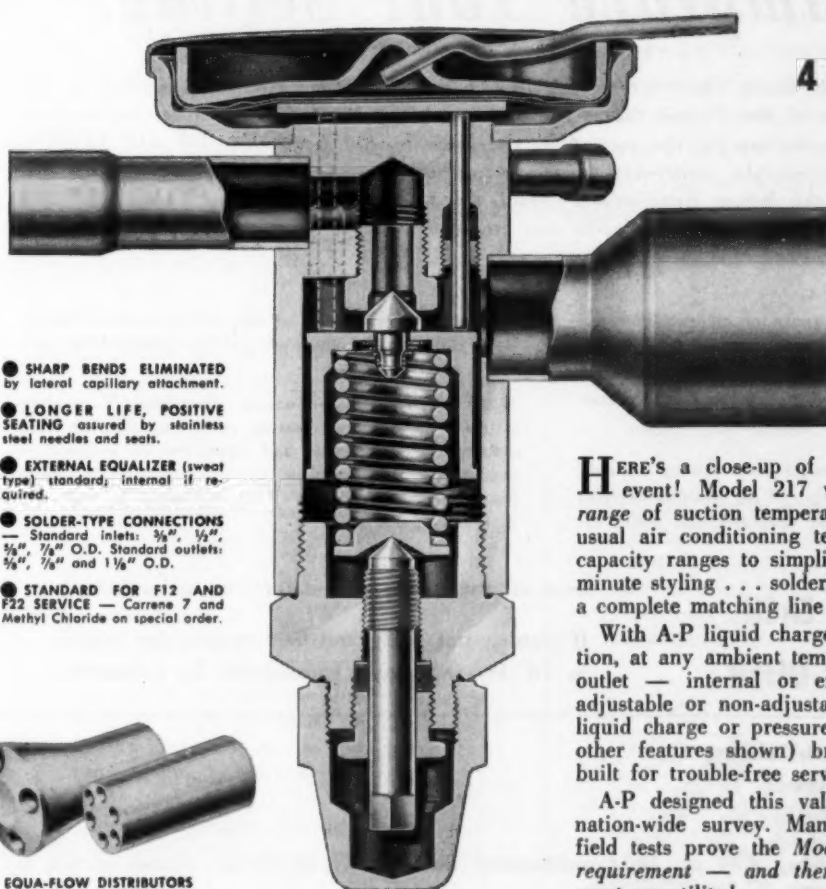
storage space. And its light weight (one-eighth that of steel pipe) makes it easier to stock, transport, and install.

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What Happened In Residential Air Conditioning In Memphis In '54?

Of 344 Units Installed 130 Went Into New Homes, 206 Into Existing Homes
And 8 Into Speculative Projects, Survey of 34 Contractors Shows

By C. Dale Mericle

MEMPHIS—There's an excellent market for residential air conditioning in Memphis, and the market is being tapped.

A survey made by AIR CONDITIONING & REFRIGERATION NEWS shows that 344 air conditioning units were installed in Memphis homes this year during the period Jan. 1 through Sept. 30.

In making the survey the NEWS sought answers to the same questions which were asked in Wichita, Kan., and Fort Worth, Texas. Stories about these two cities appeared in the Oct. 18 and Nov. 8 issues, respectively.

Summing up briefly the "Memphis Story":

Of the 344 units installed in Memphis residences this year, 130 went into new homes, 206 into existing homes, and eight into speculative "projects."

Of the 344 units, 84 used air-cooled condensers; the balance (260) employed water-cooled condensers.

A total of 34 different contractors installed the 344 units. The number of contractors is evenly divided between firms representing "old-line" air conditioning manufacturers and those representing

There have been a lot of words written about the future of the market for residential air conditioning systems, but remarkably little about what has actually happened in the sale and installation of such equipment.

In order to present a factual picture of the number and kind of systems that have been sold, and the type of businesses that sold and installed them, the NEWS has sent Associate Editor C. Dale Mericle into some areas that have been good markets this year. He was instructed to report as completely as possible on just what did happen in residential air conditioning in those areas thus far this year. A report in the October 18 issue discussed the situation in Wichita, Kan.; the survey from Fort Worth, Texas appeared in the Nov. 8 issue.

The story published on these pages is Mericle's report from Memphis, the third area that he visited.

furnace manufacturers.

But (and it's a big "but") the 16 contractors classified as "air conditioning" firms installed 245 units compared to the 92 units put in by 16 "heating" firms.

The remaining two "contractors" include a lumber company and a home builder, whose combined installations numbered seven.

Basic data on the Memphis residential installations was obtained from records on file in the Building Inspection Department of

the city. Installation permits on all installations of 2 hp. and above are required.

Admittedly there can be some delay in the filing of permits. For this reason Sept. 30 is given as the last day of the period covered by the survey although the city permits were actually checked three weeks later on Oct. 20.

Thus it is quite possible that some jobs which went in between Sept. 30 and Oct. 20 are included in these figures. In all probability,

though, these would be offset by the jobs installed shortly before Sept. 30 but not on file by Oct. 20.

In any event, the over-all trends indicated in the Memphis survey would hardly be affected by any slight discrepancy that may have resulted from the arbitrary selection of Sept. 30 as the closing date.

Reader reaction to the Fort Worth and Wichita surveys reveals surprise in some quarters that so many "existing" homes are being air conditioned as compared with new homes.

Ratio of Old Homes to New Homes Is High

This trend (if it is a "trend") is quite pronounced in Memphis. Here installations in existing homes outnumbered those in new homes 206 to 130.

The small number of installations in speculative projects as reported in Memphis (likewise in Wichita and Fort Worth) has given rise to some questions also.

In these surveys the NEWS has been attempting to distinguish between (1) installations put in on the decision of the individual homeowner or buyer, and (2) those put in by the speculative builder regardless of whether he had a buyer or even a prospect for the house.

In all probability quite a number of the installations listed under the "new homes" classification actually went into homes constructed as part of a speculative project. But the air conditioning feature was offered by the builder as optional equipment rather than being "part-and-parcel" of the home.

Speculative Builders' Usual Practice

This would be in line with conventional practice of the speculative home builder. He may construct from one to 100 homes or more on a speculative basis. Usually there is one or more "model" or sample homes complete in every detail put up first by the builder.

Such model homes are usually the "greatest," having all the optional features and first-line quality products. The prospect or buyer, however, usually has the option of including or omitting such features as air conditioning when he buys or contracts for a home in the project.

Although a number of projects have been built in various parts of the country featuring air conditioning in every home, none of any

significant number were put up to date this year in Memphis, Fort Worth, or Wichita, according to the data obtained from contractors in these cities.

Another question asked in the survey dealt with the number of installations using air-cooled condensers as compared with the number employing water-cooled condensers.

260 Water-Cooled Systems Installed

There were 84 air-cooled jobs and 260 water-cooled systems installed in Memphis residences, the survey shows.

The number of air-cooled units is significant, especially in view of the fact that 80 of these were installed by one contractor. The same firm also installed 21 water-cooled jobs for a total of 101 residential jobs.

This firm represents a manufacturer that is producing air-cooled equipment in quantity. Some other manufacturers, as mentioned in the Fort Worth and Wichita reports, are producing air-cooled equipment also but apparently in small quantities only. At least, the contractors representing such manufacturers say that extremely few air-cooled units had been delivered to them thus far this year.

It will be interesting to see what happens in the future when more manufacturers are making air-cooled units available in quantity.

No service problems peculiar to residential air conditioning were noted in the Memphis survey.

Details on Individual Contractors

A run-down of the 34 individual contractors listed in the accompanying table shows the following:

Contractor No. 1 (101 units) represents an old-line manufacturer of air conditioning, refrigeration, and heating equipment. Firm has its own sheet metal shop.

Contractor No. 2 (42 units) represents both an old-line air conditioning and refrigeration manufacturer and a furnace manufacturer. Has own sheet metal shop.

Contractor No. 3 (40 units) is a heating firm with its own sheet metal shop. Units installed included three different lines: two furnace manufacturers and one air conditioning manufacturer.

Contractor No. 4 (33 units) represents an old-line air conditioning and refrigeration manufacturer. Has own sheet metal shop.

Contractor No. 5 (15 units) represents an old-line air conditioning and refrigeration manufacturer. Does not have sheet metal shop.

Contractor No. 6 (14 units) installed two makes of units, both produced by air conditioning and refrigeration companies. Does not

(Concluded on next page)



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MANUAL NO. K-2—Sheet metal ducts (sizing methods, problems of design); discussion of air cleaning devices; heat transmission coefficients; problems and tables for

figuring heat gain; air through cooling coils; selection of cooling coils, expansion valves, compressors, and water cooling coils.

MANUAL NO. K-3—General discussion of heating systems; selection of heating coils (air friction, condensation); description and operation of evaporative condensers; water cooling towers; automatic controls; piping refrigerant, water, and steam; and insulation problems.

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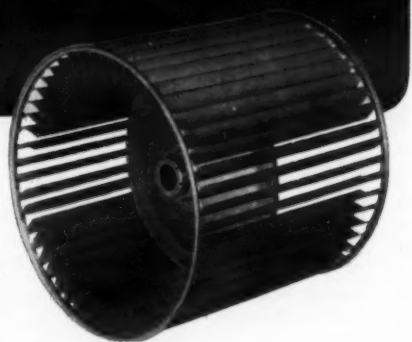
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Residential Air Conditioning

Residential Air Conditioning In Memphis

Contractor	Total Units This Year	New Homes	Existing Homes	"Projects"	Air Cooled	Water Cooled
1	101	31	65	5	80	21
2	42	15	27	...	...	42
3	40	23	17	...	3	37
4	33	10	20	3	1	32
5	15	6	9	...	...	15
6	14	4	10	...	...	14
7	13	8	5	...	...	13
8	10	4	6	...	...	10
9	8	4	4	...	...	8
10	8	6	2	...	...	8
11	7	2	5	...	...	7
12	5	1	4	...	...	5
13	5	2	3	...	...	5
14	5	5	...	...	...	5
15	4	3	1	...	...	4
16	4	...	4	...	...	4
17	3	...	3	...	...	3
18	3	1	2	...	...	3
19	3	...	3	...	...	3
20	2	...	2	...	...	2
21	2	1	1	...	...	2
22	2	2	...	...	...	2
23	2	...	2	...	...	2
24	2	...	2	...	...	2
25	2	1	1	...	...	2
26	1	...	1	...	...	1
27	1	...	1	...	...	1
28	1	...	1	...	...	1
29	1	...	1	...	...	1
30	1	1	...	...	...	1
31	1	...	1	...	...	1
32	1	...	1	...	...	1
33	1	...	1	...	...	1
34	1	...	1	...	...	1
Total	344	130	206	8	84	260

Memphis Home Air Conditioning Survey --

(Concluded from preceding page)

operate own sheet metal shop.

Contractor No. 7 (13 units) represents a furnace manufacturer and operates own sheet metal shop.

Contractor No. 8 (10 units) installed equipment of two old-line air conditioning and refrigeration manufacturers. Does not have sheet metal shop.

Contractor No. 9 (eight units) represents two furnace lines and has own sheet metal shop.

Contractor No. 10 (eight units) represents two furnace lines and has own sheet metal shop.

Contractor No. 11 (seven units) represents an air conditioning manufacturer. Has own sheet metal shop.

Contractor No. 12 (five units) represents an old-line air conditioning company. Does not have sheet metal shop.

Contractor No. 13 (five units) installed units of two furnace manufacturers. Does not have sheet metal shop.

Contractor No. 14 (five units) is a builder of homes whose installations included units of a furnace manufacturer and a producer of refrigeration equipment. Does not have sheet metal shop.

Contractor No. 15 (four units) installed two makes of units, one produced by an air conditioning manufacturer, other by a furnace manufacturer. Has own sheet metal shop.

Contractor No. 16 (four units) installed units of two old-line air conditioning and refrigeration manufacturers. Does not have sheet metal shop.

Contractor No. 17 (three units) installed units of air conditioning manufacturer. Does not have own sheet metal shop.

Contractor No. 18 (three units) installed units of furnace manufacturer. Does not have sheet metal shop.

Contractor No. 19 (three units) represents old-line air conditioning and refrigeration manufacturer. Does not have sheet metal shop.

Contractors 20 through 25 installed two units apiece. Five different makes are represented in the 12 units. Four units were turned out by two different furnace manufacturers; eight units

by three different old-line air conditioning and refrigeration manufacturers. Two of the six contractors have their own sheet metal shops.

Contractors 26 through 34 installed one unit each. Seven different makes are represented among the nine units involved, including one unit of each of three furnace manufacturers; four units of three old-line air conditioning and refrigeration manufacturers; two units made by a producer of refrigeration equipment. Two of these contractors have their own sheet metal shops.

Temco, Inc. Appoints Lee Rasch To Head Central Heating Div.

NASHVILLE, Tenn.—Announcing the addition of a complete line of central heating equipment to its gas appliances,



Temco, Inc. said air conditioning units ranging from 2 to 5-ton capacity will also be introduced for use with the central heating units in a "package" or as individual units.

Lee W. Rasch

Lee W. Rasch, formerly president of Rasch Mfg. Co., Kansas City, Mo., has been

appointed manager of the Central Heating Div. by the Nashville company.

Rasch brings to his new job a wealth of experience, dating back to 1935 when he joined American Gas Product Corp. of New York City as a testing engineer, Temco said.

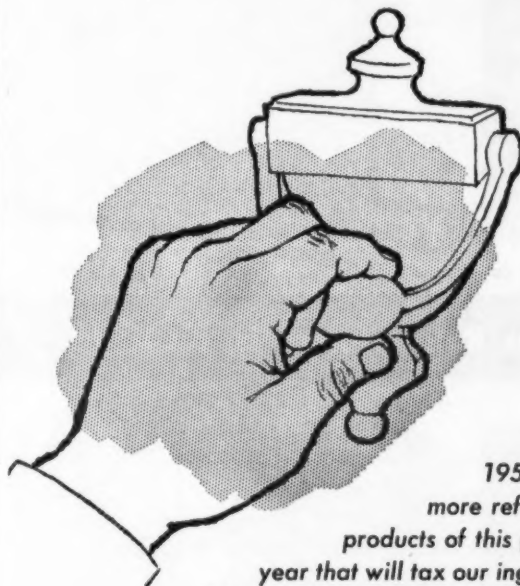
In 1946, upon return from three years' duty with the U. S. Navy, Rasch became vice president of Security Mfg. Corp. in Kansas City. In 1953 he joined the newly-organized Rasch Mfg. Co. as vice president.

The new line of central heating and air conditioning equipment will be shown to the trade for the first time at the 12th International Heating & Ventilating Exposition in Philadelphia Jan. 24-28.

Plans call for the following furnaces: "Lo-Boys" ranging in size from 90,000 to 170,000 input; "Hi-Boys"—from 62,500 to 160,000; gravity furnaces—60,000 to 125,000; horizontals—65,000 to 140,000; "Counter-Flo" furnaces—80,000 to 125,000.

The move into central heating equipment by Temco comes as a logical one, according to F. Donald Hart, executive vice president. Temco, Hart points out, will be drawing upon its engineering know-how gained in years of specialization in the gas heating field.

Temco has confined its production for the most part to space heating equipment—gas wall heaters, floor furnaces, and space heaters.



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1955 will be a year of challenge. America is demanding more refrigeration, more air conditioning, more of the products of this greatly expanding industry. This will be a year that will tax our ingenuity, demand our best planning and take our full production. Here, at Lehigh, we are well prepared for another banner year. Our production facilities have been increased. Our engineering is alert to all developments. Management is traditionally aggressive and understanding. Resources are ample and modern. This is just a hint of what this progressive 'independent' offers for '55.

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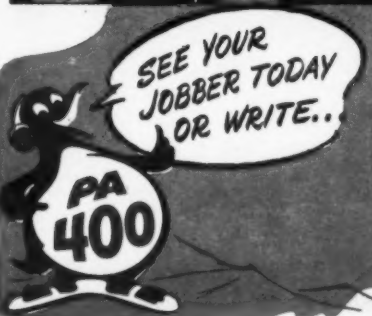
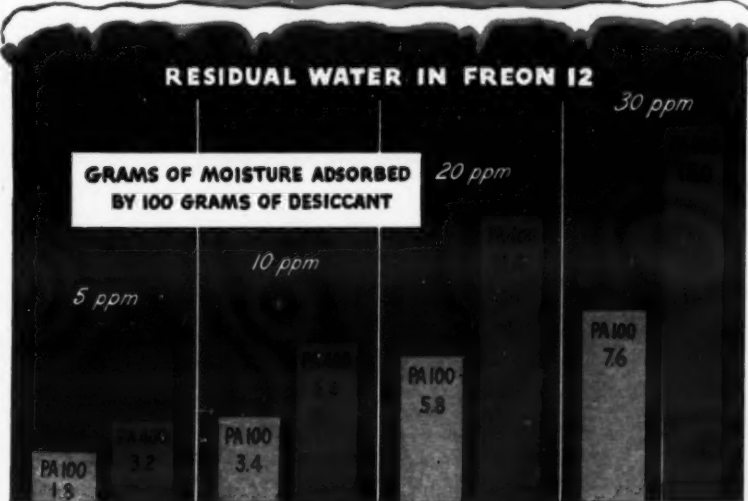
DAVISON'S NEW Refrigeration Desiccant

WITH GREATER MOISTURE ADSORPTION CAPACITY

Up to 98% increase in moisture capacity

The Davison Chemical Corporation has long been a leading producer of refrigeration desiccants and the manufacturer of PA 100 — the top desiccant in the field. Now, after many years of research, they have produced PA 400 — a refrigeration desiccant with a greatly increased adsorption capacity.

Tests run on the moisture adsorption capacity of PA 400 in Freon-12 in comparison with Davison's PA 100 show up to 98% increase in capacity.



DAVISON CHEMICAL COMPANY
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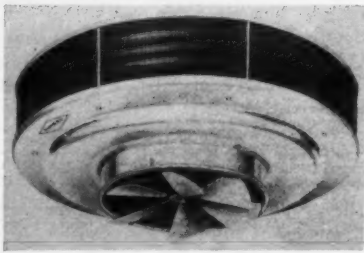
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Can Remove Motor, Fan from Bottom of Heater



KEY NO. D-1150

CHICAGO—A new downblow unit heater, the only one manufactured with a motor and fan that can be removed from the bottom of the unit, and a die-formed full venturi, is being marketed by the Union Asbestos & Rubber Co.

Pointing out that servicing of the motor and fan assembly, should it be required, is relatively simple, Chester S. Stackpole, general sales manager of Unarco's heating and cooling division, explained:

"The motor mountings are completely separated from the coil and heated air stream and are attached to special rubber mountings in the bottom of the motor well.

"The design of the well enables

the serviceman simply to loosen four bolts in order to drop the well, motor, and fan from the unit. However, the design is such that there is no possibility of the assembly working itself loose and accidentally dropping out."

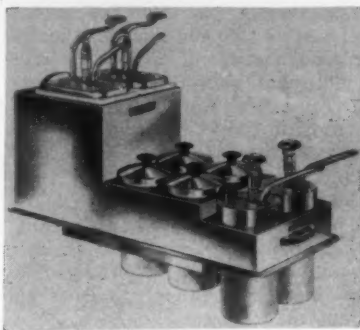
Unarco's full venturi, according to Stackpole, has resulted in an extremely quiet unit.

Unarco engineers have grouped these new unit heaters into four classifications, ranging from one to four. For instance, the quietness level of Class I units makes them suitable for courtrooms, class rooms, hospitals, private offices, and theaters, which indicates their almost noiseless operation.

Class II units can be installed in hotel dining rooms, show rooms, small stores, and similar places.

Stackpole said Class III and IV units are designed for use where relatively higher noise levels can be tolerated.

Available in both one and two-row coils, he continued, the Unarco downblow heater can be had with outputs ranging from 40,000 B.t.u. to 580,000 B.t.u.



Twin 'Fountainette' Has Lever Action Pumps

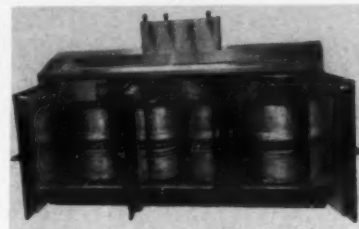
KEY NO. D-1151

CHICAGO—Helmco, Inc. here, manufacturer of fountain and food service accessories, announces the addition of a new model 224 "Fountainette" to its line.

The new unit features a newly-designed and exclusive pump with lever action, according to the company. The manufacturer claims that the new pump "is faster and much easier to use than the conventional plunger action pumps."

"The unit is made of satin finish stainless steel, and is designed for perfect temperature control in each compartment," Helmco stated. "It is equipped with four of the new lever action pumps, and four fruit wells for a large variety of topping service."

The Fountainette unit reportedly fits all standard freezer cabinets and meets health requirements.



Direct Draw Beer Cooler Will Hold Fourth Keg

KEY NO. D-1152

LA CROSSE, Wis.—A more spacious three-keg direct draw beer cooler that will accommodate a fourth steel keg was announced recently by the La Crosse Cooler Co. here.

The new cabinet is 77 in. long, over-all, and has a polished stainless steel top and heavy duty chrome plated hardware, the company said. The fourth keg in refrigerated storage will tend to eliminate dispensing delays during busy periods, the company claims.

The new unit incorporates a refrigerated faucet station.

30 Valve Models Use Same Coil Assembly

KEY NO. D-1153

ST. LOUIS—A pilot operated solenoid valve in 30 different models for all size line connections between 1/4 and 1 1/2 in. has been introduced by the Controls Div., Jackes - Evans Mfg. Co. here.

All models use the same coil assembly, thus simplifying service problems and greatly reducing replacement parts inventory, the manufacturer said.

Designed for use with "Freon-12," "Freon-22," water, air, gas, brine, ammonia, or oil, the valve has a synthetic rubber, nylon re-

inforced diaphragm that is said to be unaffected by almost any flow material. When required, replacement diaphragms can be installed in a few minutes, the manufacturer declared.

Units are available for either a.c. or d.c. operation. Bodies are supplied for screwed, sweat, or flanged connections. The valves can be installed in either horizontal or vertical lines and do not require careful positioning for proper functioning, the company asserted.

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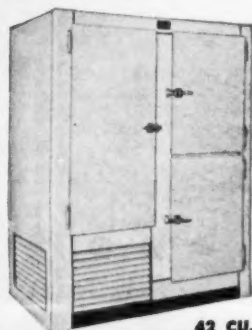
... rust, dirt chlorine taste
... service breakdowns due to rust & sludge

Stop

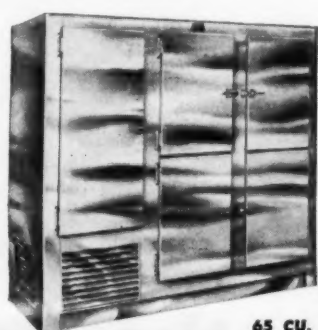
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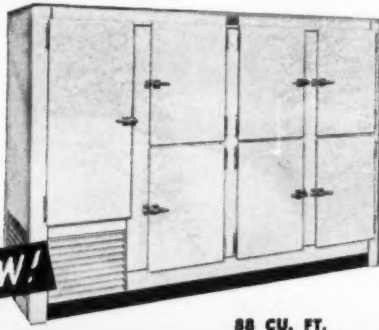
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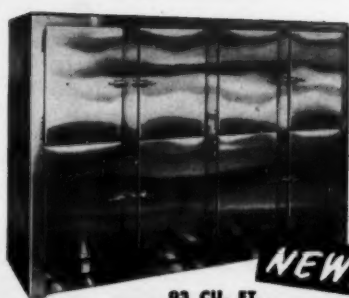


65 CU. FT.



88 CU. FT.

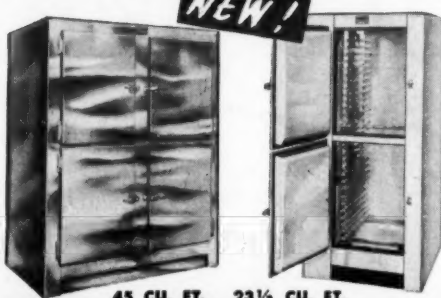
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...and More Models Are Coming! Watch KOCH

To complete the Series 2800-3800 KOCH line of standard reach-in refrigerators, three new models have been added: two four-section cabinets and a 23 1/2 cubic foot single section cabinet. The self-contained reach-ins shown across the top row are 42 and 65 cubic foot models, plus the NEW 88 cubic foot model. In the second row are shown the remote reach-in refrigerators, including the NEW 93 cubic foot size, the companion 70 and 45 cubic foot sizes, and the NEW 23 1/2 cubic foot size. Write for details.

The models shown above are representative... but do not show sliding door, low temperature, or two-temperature refrigerators, and other standard models in the vast KOCH line. And other models are coming! In addition, KOCH designs, engineers, and manufactures reach-ins to meet any application. Wherever perishables need refrigeration, in either the normal or low temperature range, KOCH can manufacture a refrigerator, efficiently and economically, to meet the most exacting requirements. Let us prove it to you.

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Suction Line Controls—2

Regulators Operated by Internal or External Pilots Are Finding Increased Use, Arley Baker Tells Service Group

This is the second and final instalment of an article covering a discussion of "Suction Line Controls," presented by Arley Baker, sales promotion manager of Alco Valve Co., before the recent annual meeting of the Mid-West association of RSES. The first instalment appeared in the Nov. 22 issue of the NEWS.

"Large evaporator pressure regulators are generally provided with external pilot circuits where pilot controls may be used with the main regulator for special applications," Baker pointed out.

"For example, a small solenoid valve installed in the external pilot line enables the regulator to function as a suction stop valve as well as an evaporator pressure regulator. Such an arrangement is shown in Fig. 6.

Use of Modified Evaporator Pressure Regulator

"Where it may be more desirable to control the temperature of the medium being cooled rather than controlling the evaporator pressure and temperature, a modified evaporator pressure regulator can be employed. A temperature pilot, as shown in Fig. 7, is used in the external pilot circuit instead of a pressure pilot.

"With the bulb of the pilot valve placed to respond to the temperature of the load, the pilot valve moves in a closing direction gradually as the temperature of the bulb decreases. This, in turn, causes the main valve to move in a closing direction gradually.

"Result is an increase in the evaporating pressure and temperature and a reduction in the temperature difference between the evaporator and the load," Baker said.

"At full load, the regulator opens wide and permits the evaporator pressure to be approximately the same value as the suction pressure, except for the pressure drop loss through the regulator.

"In a water cooler, for example, a large temperature split may be used without danger of a 'freeze up' when the load is high. This arrangement provides the maximum temperature difference to accommodate the high load and maximum rate of pull down.

"On a single evaporator installation, when the load is satisfied, it is necessary to provide a limit control in the form of a thermostat or pressure switch to control the operation of the compressor and solenoid liquid valve. If a low limit control of evaporator pressure is required when using the temperature pilot operated regulator, the pressure pilot shown in Fig. 7 must also be used.

Capacity Tables In Catalogs

"Capacity tables for regulators are listed in manufacturers' catalogs in terms of tons of refrigeration for certain inlet pressures and various pressure drops across the regulator," Baker explained.

"Evaporator pressure regulators on single evaporator installations should be selected for a minimum pressure drop at the lowest expected operating evaporator temperature and pressure.

"On a multi-evaporator installation, the evaporator pressure regulator selection must be based on the operating temperature and pressure of the evaporator under consideration and on a pressure drop equal to the operating evaporator pressure minus the maximum main suction pressure expected under full load conditions.

"As an example: required evaporator temperature and pressure of 40° = 37 p.s.i.g.; compressor suction pressure is 15 p.s.i.g.; the pressure drop across the valve will be 37 - 15 = 22 p.s.i.g. The valve should be selected at this pressure difference of 22 p.s.i.g.

"Suction pressure regulators," Baker said, "should normally be selected for the required capacity at the lowest pressure drop across the valve for economical compressor operation.

Do Not Oversize Either Type

"For best results on normal applications, do not oversize either type of regulator," he suggested.

At the Wichita meeting Baker also gave RSES members a copy of Alco's Handbook of Automatic Refrigerant Controls. This booklet gives the following suggestions about servicing these regulators:

"If a suction line regulator fails to function properly, the following service hints indicate some of the possible reasons for failure, along with the proper steps to place the regulator back in operation.

Some Smaller Valves Must Be Returned to Factory

"In general, suction line regulators may be field serviced with the exception of some of the smaller types which must be returned to the factory for service.

"A. Regulator action erratic, indicated by sudden jumps in pressure above or below the regulator setting without a corresponding change in load.

"1. Defective pilot operator or pilot valve. Replace pilot operator or pilot valve.

"2. Dirt or foreign material in regulator causing main piston to stick or bind. Dismantle regulator and clean internal parts thoroughly. Be sure that an adequate strainer is installed in the line ahead of the main regulator and any external pilot valve.

"B. Regulator leaking, indicated by pressure build-up on compressor side of regulator during off cycle. It should be noted that some special suction pressure regulators ('holdback' valves) are built with a 'bleed' port for pressure equalization from high side to low side for compressors that will not start under load. On installations of this type, the controlled bleed should not be mistaken for leakage.

"1. Dirt or foreign material lodged on seating surfaces holding regulator open. Dismantle regulator and clean thoroughly.

"2. Worn or eroded seating surfaces on main regulator or in integral or external pilot. Replace defective parts and components.

"C. Regulator 'hunt,' indicated by wide fluctuation in controlled pressure.

"1. Regulator oversized. An oversized regulator will tend to overshoot the control point, especially on systems operating with capacity reduction. The manufac-

turer's catalog should be checked for the regulator capacity at the system's operating conditions and a regulator of the proper capacity installed.

"2. Regulator affected by action of thermo expansion valve.

"When the external equalizer of a thermo expansion valve is connected to the suction line close to the inlet of a suction line regulator, the two controls may respond to each other in such a manner as to cause each to overcontrol or 'hunt.'

"In such cases, the thermo valve external equalizer line connection should be moved as far away from the regulator (toward the evaporator) as possible. To minimize this 'hunt' on close-coupled installations, it may be necessary to locate the thermo valve equalizer line connection at a point midway in the evaporator or in the evaporator inlet.

"D. Excessive pressure drop across regulator.

"1. Regulator undersized. Check regulator capacity in manufacturer's catalog and re-size accordingly.

"2. Partially plugged internal pilot connection or external pilot line. Locate and remove stoppage.



FIG. 6—Solenoid pilot valve used with evaporator pressure regulator lets regulator function also as suction stop valve.

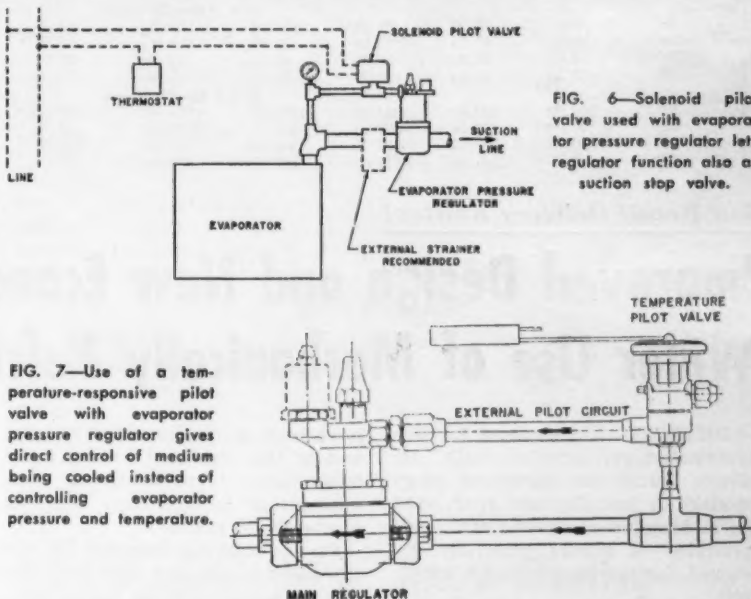


FIG. 7—Use of a temperature-responsive pilot valve with evaporator pressure regulator gives direct control of medium being cooled instead of controlling evaporator pressure and temperature.

"3. Defective integral or external pilot. Replace pilot.

"E. Regulator stays in full open position.

"1. Partially plugged internal

pilot connection or external pilot line. Locate and remove stoppage.

"2. Defective integral or external pilot. Replace pilot.

"F. Regulator chatters. See C."



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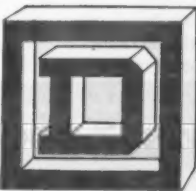


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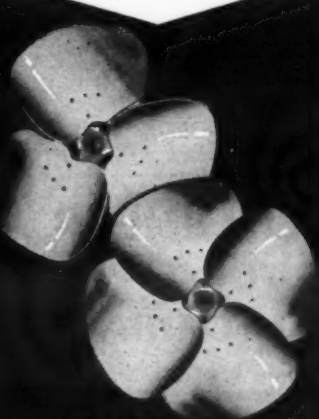
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Schedule Showing Cost Per Ton of Ice

Lbs. of Ice Per Point		Cost Per Ton of Ice									
Lbs. of Ice Per 400 Points		\$1.00	\$2.00	\$3.00	\$4.00	\$5.00	\$6.00	\$7.00	\$8.00	\$9.00	\$10.00
Daily											
1	400	.20	.40	.60	.80	1.00	1.20	1.40	1.60	1.80	2.00
¾	300	.15	.30	.45	.60	.75	.90	1.05	1.20	1.35	1.50
½	200	.10	.20	.30	.40	.50	.60	.70	.80	.90	1.00
¼	100	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50
Monthly (30 days)											
1	400	6.00	12.00	18.00	24.00	30.00	36.00	42.00	48.00	54.00	60.00
¾	300	4.50	9.00	13.50	18.00	22.50	27.00	31.50	36.00	40.50	45.00
½	200	3.00	6.00	9.00	12.00	15.00	18.00	21.00	24.00	27.00	30.00
¼	100	1.50	3.00	4.50	6.00	7.50	9.00	10.50	12.00	13.50	15.00
One 5 Month Year											
1	400	30.00	60.00	90.00	120.00	150.00	180.00	210.00	240.00	270.00	300.00
¾	300	22.50	45.00	67.50	90.00	112.50	135.00	157.50	180.00	202.50	225.00
½	200	15.00	30.00	45.00	60.00	75.00	90.00	105.00	120.00	135.00	150.00
¼	100	7.50	15.00	22.50	30.00	37.50	45.00	52.50	60.00	67.50	75.00
Ten 5 Month Years											
1	400	300.00	600.00	900.00	1200.00	1500.00	1800.00	2100.00	2400.00	2700.00	3000.00
¾	300	225.00	450.00	675.00	900.00	1125.00	1350.00	1575.00	1800.00	2025.00	2250.00
½	200	150.00	300.00	450.00	600.00	750.00	900.00	1050.00	1200.00	1350.00	1500.00
¼	100	75.00	150.00	225.00	300.00	375.00	450.00	525.00	600.00	675.00	750.00

For Retail Delivery Routes!

Improved Design and New Economies Result In Wider Use of Mechanically Refrigerated Trucks

DETROIT—The demand for mechanically refrigerated milk delivery trucks has increased enormously in just the last year, says G. E. Mumma of Divco Corp. here, producer of trucks especially designed for use in the dairy industry.

87% OF INSULATED TRUCKS EQUIPPED WITH REFRIGERATION

Not too long ago the percentage of refrigerated trucks supplied by Divco to milk retailers was so small it was hardly worth noticing.

However, in the past year, more than one-third of all Divco trucks

have been of the insulated variety, and of the insulated trucks, some 87% have been equipped with mechanical refrigeration systems at the Divco plant.

One of the big reasons for the increased popularity has been improved units used in the trucks. A Copeland condensing unit is mounted out-of-the-way under the driver's seat, and is "plugged in" before the truck starts out in the morning to furnish the refrigerating effect for the Dole or Kold-Hold evaporator plates in the truck body.

SCHEDULE SHEET INDICATES ECONOMIES

Another big factor is the economies that can be shown with the use of mechanical refrigeration. Divco officials offer the following data on this score:

"There is a manner in which to arrive at ice usage and cost and that is the pounds of ice per point of pay load placed in the delivery vehicle as it goes out with its pay load. Many things have to be considered to arrive anywhere near the proper usage and the cost in this method.

The schedule sheet covers the usage of ice from 1/4 lb. per point to 1 lb. per point and ice costs from \$1 per ton to \$10 per ton. Ice costs are reported all the way from 70 cents per ton to \$9 per ton.

"From the information collected it is estimated that 1 lb. of ice per point of pay load would be the maximum required because this would provide 400 lbs. of ice for a 400 point load.

COST OF ICE MUST BE DETERMINED FROM RECORDS

"Cost of ice per ton will have to be determined from the cost records of the dairy operation.

"When ice costs are used to arrive at a conclusion regarding the advisability of converting to insulation and mechanical refrigeration the 'Cost Per Ton of Ice'

schedule shown above can be referred to for the saving in ice cost."

From the above schedule of the 400 point load any load can be calculated by adjusting the four hundred points up or down and from that point arriving at the daily, monthly, and yearly.

In the case of yearly usage a five month year is shown, but this again can be adjusted up or down. Likewise, the number of years for vehicle life or amortization plan can be adjusted.

Note that \$10 per ton ice on a 10-year five-month plan with 1 lb. of ice per point amounts to \$3,000 in 10 years. Whereas, under the same schedule \$1 per ton ice on a 10-year five-month plan with 1/4 lb. of ice per point amounts to \$75 in 10 years. These are the two extremes, no doubt the actual experience of most operations will lay in between these two.

"The varying charges for use of electrical current in all sections of the United States makes it impossible to show power cost, but reasonable estimates of these can be obtained through the local power companies.

"One horsepower equals 746 watts or 3/4 KWH—An average cost of current per month is \$5 for a fleet of trucks.

MAINTENANCE COSTS VARY

"Maintenance costs will vary with the age of the equipment.

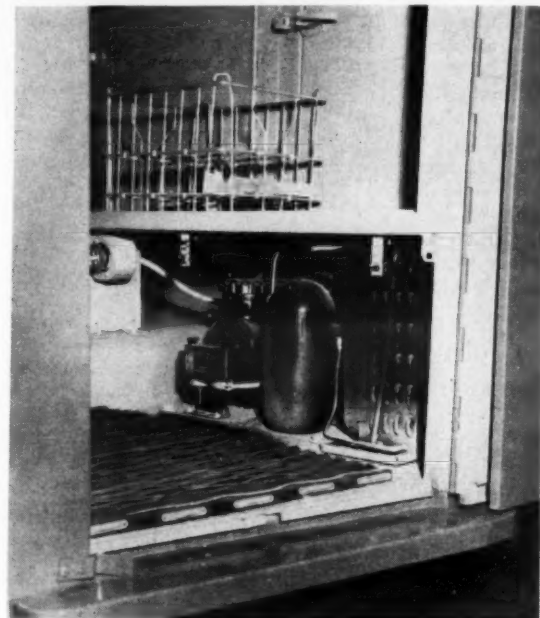
"An average of \$2 per month for the first five years should be ample estimate for a 1/2, 3/4, or 1-hp. unit of the sealed in type.

"Some individuals consider removing the compressors from the trucks during the periods of the year when they are not required; this would be more important where the warm season was five months or less. This removal may add to the maintenance cost, but if the gas was not lost when disconnecting, the elimination of the road shock for seven or more months may actually result in a saving."

Commercial Refrigeration

Table of Amortization

I & R Cost	AMORTIZATION			Power See Notes Below	Maintenance See Notes Below
	Per Year on 5 Year Plan	Per Month for 5 Month Year	Per Month for 12 Month Year		
\$ 900.00	\$180.00	\$36.00	\$15.00		
1050.00	210.00	42.00	17.50		
1100.00	220.00	44.00	18.33		
1200.00	240.00	48.00	20.00		
1300.00	260.00	52.00	21.67		
1400.00	280.00	56.00	23.33		
1500.00	300.00	60.00	25.00		



HIDDEN AWAY UNDER THE DRIVER'S seat of a Divco Corp. milk delivery truck is this Copeland refrigerating unit that provides cooling for milk stored in the truck's insulated body. About 87% of Divco's insulated trucks are now so equipped.



THE TWO DOLE PLATES on the ceiling of the storage compartment furnish cooling for the milk during delivery. Kold-Hold evaporator plates are also used. The refrigeration unit under the driver's seat provides the refrigerating effect for these plates. The unit is plugged in before the truck starts its run in the morning.



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The acid test of any product is performance. That's why you will find Larkin products used so widely for so many different refrigeration and air-conditioning applications. Users know from past experience that they can count on Larkin for top performance—day in, day out—year in, year out.

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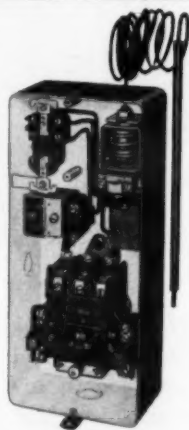
These typical compact combination controls, shown here, consist of the Bulletin 836 pressure control or Bulletin 837 temperature control units mounted in the same enclosure with an A-B Bulletin 709 solenoid starter. All interconnected wiring is made at the factory. Adequate room is provided in such enclosures for easy access to wiring and all adjustments.

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Roy Follet Dies at 54

GARDEN CITY, L. I., N. Y.—Roy C. Follet, a refrigeration engineer who operated a refrigerator firm bearing his name, died recently at his home here. He was 54. A graduate of the U. S. Naval Academy, he worked for New York Refrigeration Co. and York Air Conditioning Co. before serving with the Navy in World War II.

Percival Appoints Fields Plant, Engineering Chief

BOONE, Iowa—John D. Stoddard, president of C. L. Percival Co., has announced the appointment of F. E. Fields as plant manager and chief engineer.

For the past few months Fields has been associated with the company in an advisory capacity. His responsibility, in addition to the

factory operation and engineering, will include purchasing and personnel.

Fields has been associated actively in the refrigeration industry since January, 1940, when he joined the engineering staff of Victor Products Corp. in Hagerstown, Md. In 1950 he joined the Chrysler Airtemp Sales Corp. as the district representative in the New York area.

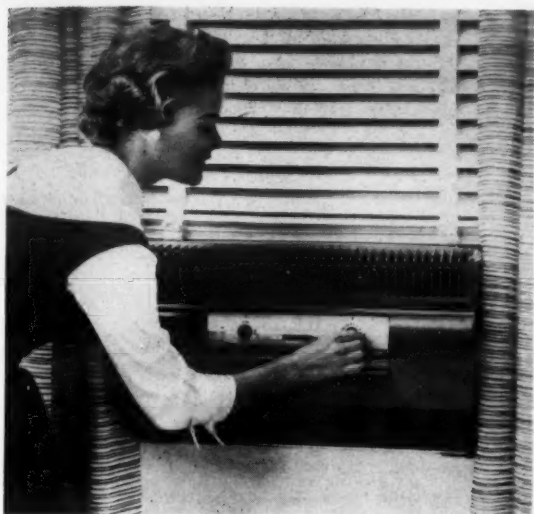
He was also associated for a brief period with Carrier Corp. in the Philadelphia district before being recalled to a short tour of active duty with the U. S. Air Force. As a captain, he served with the famous Fourth Fighter Interceptor Wing in Korea.

NEW PRODUCTS?

Turn to "What's New" Page for useful information on new products. Use Key No. for fastest service.

TOPFLIGHT ENGINEER WANTED FOR SOUTHERN CALIFORNIA

Excellent position with well-established firm. Must be graduate engineer with experience in design and layout of commercial refrigeration and air conditioning systems. Advancement opportunity limited only by one's ability, initiative and ambition. Replies considered strictly confidential. Send complete resume of education, experience and present compensation to BOX A5095, Air Conditioning & Refrigeration News.



AMANA Refrigeration's new Deluxe room air conditioner is built with increased cooling power and designed for flush mounting as one of 23 possible installed positions in double-hung or casement windows. Available in 1/2, 3/4, 1, and 1 1/2-hp. sizes, the air conditioner is priced for the volume market, and is constructed electrically according to the specifications of the new National Electric Code.



MODEL DEMONSTRATES the special ice cream rack on the 1955 Amana upright freezer. The freezer also features a "left-over" rack, which is located just above the ice cream shelf.

Amana 1955 Freezers, Room Units--

(Concluded from Page 1, Col. 2) with a producing oil well as the first prize.

The Amana 1955 upright freezers are topped by models featuring a pull-out service shelf and a large-capacity "Stor-Mor Door" equipped with a special ice cream compartment, a shelf with its own containers for leftovers, and adjustable storage racks.

The firm's 1955 line includes Stor-Mor upright freezers in 12, 15, 19, and 25-cu. ft. sizes. The 25-cu. ft. model is a new size. Eight and 14-cu. ft. chest freezers are being continued in the line.

The greatest amount of food in the Stor-Mor Door is held in gravity-fed racks. Two rows of these vertical racks hold the food packages one on top of the other, as in a cigarette vending machine. When the bottom package is removed from any rack, the remaining packages drop one notch.

A latticed-door ice cream compartment covering the lower quarter of the door can hold 35 pints of ice cream in the model 19; and 27 pints in the model 15.

'LEFT OVER SHELF'

Immediately above this ice cream compartment is the "left-over shelf" consisting of a row of one-pint, free-sealing freezing containers. In the model 19 there are six of these red and yellow, reusable polyethylene containers for storing leftovers, soups, and other such foods; in the model 15 there are five. Cans of frozen juice concentrate are stored on their own special shelf, the Juice Bar.

The pull-out service shelf is lo-

cated directly beneath the fourth shelf in the main freezer compartment. It slides out for use in removing or re-adjusting food packages on any of the shelves.

The 15 and 19-cu. ft. models are equipped with four positive-contact shelves, in addition to freezing coils at the top and bottom of the main storage space. The 12-cu. ft. model has three freezing shelves in addition to coils at top and bottom, and one adjustable wire shelf.

With the exception of the 25-cu. ft. models which are grey, the 1955 Amana freezers are finished in white enamel. A gently-curved gold band decorates the front of the doors of models 15 and 19. Interior trim is gold and Ice Green.

DOOR CAN BE REMOVED WITHOUT TAKING OUT SCREWS

Design of the Stor-Mor Door hinges permits removing the door without removing any screws, making it easy to move the freezer through a small doorway or hall. Even the model 25SM will pass through a 32-in. door opening, the company says. To aid the serviceman, the condensing unit may be serviced entirely from the front of the freezer.

Other features of the Amana upright freezers include: 1) The door handle is of the "frame" type, and contains a built-in tumbler lock; 2) The door gasket is a large balloon section that seals positively over a large range of door adjustments;

3) Inside liner of the freezer cabinet is firmly attached to the freezer plates, thus making it a secondary freezing element; 4) Doors and cabinet have unusual strength and rigidity because of a unique, truss-type construction; 5) Every "positive contact" freezing surface in the freezer is made of aluminum.

Amana's complete line for 1955 includes the models listed and priced in the accompanying table.

ROOM AIR CONDITIONER LINE

Two lines of room air conditioners, built with increased cooling power and designed for flush mounting as one of 23 possible installed positions in double-hung or casement windows, are being introduced by Amana.

All models are equipped with thermostats to automatically maintain the desired temperature, and are constructed electrically according to the specifications of the new National Electrical Code, so as to require less elaborate and less expensive wiring installations.

The Year-Round models, in 1/2, 3/4, 1, and 1 1/2-hp. sizes, are claimed to deliver more cooling because the condensers have been increased in size up to 33%, and the evaporator by as much as 50%. Any one of six different com-

binations of cooling, heating, dehumidification, and ventilation may be selected by adjusting a single glider control located across the front of the unit.

Available with either a tan or ivory front, both with gold trim, the Year-Round models contain a heating unit. The new De Luxe room air conditioner line, lower priced for the volume market, come in 1/2, 3/4, 1, and 1 1/2-hp. sizes. Capable of delivering cooling, ventilation, and dehumidification, they also are built with large evaporators and condensers for top cooling performance. The cabinets are brown with gold metal trim.

BUILT TO OPERATE ON MORE STANDARD ELECTRICAL CIRCUITS

Amana's 1955 models are built to operate on more standard electrical circuits, according to terms of the new National Electrical Code. Each of the 3/4-hp. models has a current consumption of less than 12.5 amperes and may be installed on a single outlet 15-amp circuit. The 1/2-hp. models may be installed on a 115-volt multiple outlet 15-amp circuit.

Both lines are engineered for quiet, vibrationless operation. The metal case and internal parts are acoustically insulated, with the front of the conditioners made of a sturdy, sound-deadening plastic.

Adjustable installation in any one of 23 positions is possible because there are no side louvers that might be blocked by curtains or walls. Both intake and exhaust openings for condenser air are located at the back end of the cabinet. Less than 5 in. of the De Luxe models need be installed inside a room, beyond the window line; and in the Year-Round models, a little more than 6 in.

All models will fit any opening more than 25 in. wide and 15 in. high. They include a standard installation kit for double hung windows 26 in. to 48 in. wide. Also available are special kits for wide windows and casement windows; adjustable floor supporting legs and an inside mounting kit which allows the window to be closed or opened for washing.

All models have the same size cabinets (15 in. high, 25 in. wide, and 34 1/8 in. deep) except for the 1 1/2-hp. models which are about 1 1/2 in. higher at the rear, to permit a greater discharge of air.

CONTROL POSITIONS ARE COLOR-CODED

In the Year-Round models the desired weather may be selected by sliding the glider control knob to one of these positions: Exhaust, Heat, Off, Cool, Dry Cool, Cool Vent, and Fan Vent. The necessary switching of dampers, compressor, and fan is accomplished automatically once the control is set. Each of the seven control positions is color-coded and softly illuminated.

In the De Luxe models, the de-

UPRIGHT FREEZERS

Model No.	Size	Food Storage Capacity	Suggested Retail Price
12	11.7 cu. ft.	410 lb.	\$399.50
15	15.4 cu. ft.	540 lb.	519.50
19	19.6 cu. ft.	685 lb.	624.50
25SM	25.0 cu. ft.	875 lb.	729.50

CHEST FREEZERS

80	8.0 cu. ft.	280 lb.	\$279.50
140	14.0 cu. ft.	490 lb.	399.50

YEAR-ROUND ROOM AIR CONDITIONERS

Model No.	Hp.	Volt.	Suggested Retail Price
50C-1, 50C-2	1/2	115	\$329.50
50CL-1, 50CL-2 (Ivory front)	1/2	115	
75C-1, 75C-2	3/4	115	389.50
75CL-1, 75CL-2 (Ivory front)	3/4	115	
75C-3	3/4	230	389.50
75C-5	3/4	208	389.50
100C-3, 100CL-3	1	230	439.50
100C-5, 100CL-5	1	208	439.50
150C-3, 150CL-3	1 1/2	230	489.50
150C-5, 150CL-5	1 1/2	208	489.50

DE LUXE LINE

50D-1, 50D-2	1/2	115	\$299.50
75D-1, 75D-2	3/4	115	329.50
75D-3	3/4	230	329.50
75D-5	3/4	208	329.50
100D-3	1	230	389.50
100D-5	1	208	389.50
150D-3	1 1/2	230	419.50
150D-5	1 1/2	208	419.50

sired indoor weather may be selected by adjusting a Cool-Fan-Off switch knob and a Cool Air-Outside slide control.

Details and prices on Amana 1955 room air conditioners are as indicated in the accompanying listing.

Part of the convention program consisted of a symposium on freezer-food plans, conducted by Walter A. Wendler, assistant general manager. The food plan method of selling has made a tremendous comeback this year, with some distributors reporting that 90% or more of freezer retail sales in metropolitan areas being made on the food plan.

A major speaker on the symposium was C. Virgil Martin, vice president, Carson Pirie Scott & Co., Chicago department store, which late in 1953 became the first big department store to start handling the Amana food plan. Carson's quick success sparked the interest of other big stores, and today there are 69 such food plans in department stores and their branches.

Martin outlined some of the methods and problems in a department store approach to a food plan. His enthusiasm for it was indicated by his appearance on the Amana convention program, as he stated that such an appearance by a Carson's executive was without precedence.

(A more detailed account of the frozen food symposium will appear in later issues.)

RACCA Meeting--

(Concluded from Page 1, Col. 3)

pation in Program and Apprentice Activities of the Joint Committee." Secret will outline "The Purpose, Procedure, and Advantages of Establishing 'Rules of Practice' for an Industry."

Following each of these talks, panel and general discussions of the subject are planned. In addition, three members of the Miami Sales Executives Club will conduct a sales clinic on contractor sales Friday afternoon.

Tally H. Embry, local advertising agency owner will talk on "The Advertising Approach to Sales," M. F. Williams, Miami branch manager for the Fuller Brush Co., will discuss "Securing and Training Salesmen," and Gregory P. Marbaugh, division manager of Electrolux Corp., will speak on "Managing the Sales Force." Henry Keels, president of the club will be moderator.

The association's cocktail party and annual banquet are scheduled for Friday evening.

Dealers To Hear Banker

TOLEDO — Members of the Akron Appliance Dealers Association will be guests of Ohio Edison Co. on Dec. 14 when they will hear an address by Paul Belcher, vice president of the First National Bank there, Donald Walter, president of AADA, announced.

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Home Unit 2 to 10 h.p.

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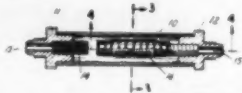
UNITED STATES AIR CONDITIONING CORPORATION
MINNEAPOLIS 14, MINNESOTA

For dealer plan write Dept. ACRN 114

PATENTS

Week of July 20
(Continued)

2,683,973. FREEZEPROOF EXPANSION VALVE. George Mettler, Union City, N. J., assignor of one-third to Magnus Bjornstad, Weehawken, N. J. Application Oct. 25, 1951, Serial No. 253,121. 3 Claims. (Cl. 62-127.)



1. A freeze proof expansion valve of the character described comprising a tubular housing having a central passage; a fitting fastened to said housing at one end; a strainer fastened in the central passage in said fitting, a second fitting fastened in the other end of said housing; a valve element placed inside of said housing and having a threaded shank screwed into said second fitting, said valve element comprising a threaded body having a central bore from said shank end, said central bore terminating in a transverse hole in the middle of said body; a flexible tube placed over said body in pressure contact with said threaded portion, and a helical spring wound over said flexible tube in the opposite direction of said screw thread.

2,684,023. AIR OUTLET FOR VENTILATING SYSTEMS. Friedrich Honerkamp, New York, N. Y., assignor to Anemostat Corp. of America, New York, N. Y., a corporation of Delaware. Application Oct. 19, 1949, Serial No. 123,312. 4 Claims. (Cl. 98-40.)

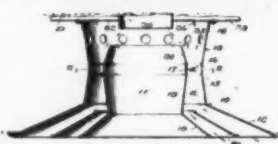


1. An air distributing device comprising an outermost hollow forwardly flaring member open at its rear end for supply of air to the device and open at its front end for escape of air from the device, the front end of said member being of rectangular shape, a second member similar to said outermost member disposed within and spaced from said outermost member, said second member being of forwardly flaring frustopyramidal form and being disposed symmetrically relative to said outermost member, and a forwardly flaring member of frusto-conical form disposed within said outermost member rearwardly of said second member to effect deflection outwardly with respect to said second member of air supplied to the device, the front end of said frusto-conical member being of a diameter greater than the width of the rear end of said frusto-pyramidal member.

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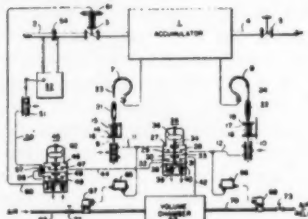
Turn to "What's New" Page for useful information on new products.

2,684,024. AIR OUTLET DEVICE FOR VENTILATING APPARATUS. Franz J. Kurth, Mamaroneck, N. Y., and Leonard R. Phillips, East Hartford, Conn., assignors to Anemostat Corp. of America, New York, N. Y., a corporation of Delaware. Application May 25, 1951, Serial No. 223,209. 3 Claims. (Cl. 98-40.)



2. An air outlet device for ventilating apparatus comprising outer and inner members spaced apart to provide between them a passageway extending longitudinally of the device, said passageway being open at its rear end for supply of air thereto and being open at its front end for discharge of air therefrom into an enclosure, said members being of sectional shapes such that said passageway includes a throat, a rear portion converging forwardly toward said throat and a front portion flaring forwardly from said throat, whereby supply air entering the rear portion of said passageway at any given velocity and flowing forwardly therethrough has its velocity accelerated, an element located rearwardly of said members and having therein openings for flow of supply air therethrough to said passageway, said openings being aligned longitudinally of the device with said passageway whereby supply air is delivered only to said passageway, the rear end of one of said members being spaced forwardly from said element to provide communication exteriorly of said passageway between the ambient air and the space between said element and the rear end of said one of said members, whereby supply air flowing forwardly through said passageway induces ambient air into said passageway for admixture with the supply air.

2,684,078. FLUID FLOW CONTROL SYSTEM. William L. Paulson, Jr., Ridgewood, and William P. Davenport, Verona, N. J., assignors to Bailey Meter Co., a corporation of Delaware. Application Oct. 9, 1948, Serial No. 53,664. 16 Claims. (Cl. 137-414.)



7. A system for controlling the supply of an agent to a condition to maintain the condition within a maximum and minimum range including, valve means controlling the agent supplied to the condition, means including a balanceable pressure responsive relay for controlling the operation of said valve means, said last mentioned means operating when the



PROCUREMENT INFORMATION

The following is a list of proposed procurements issued by the various indicated U. S. Government procurement offices. This list is compiled and made available daily on a free pick-up basis. Prospective bidders may obtain complete bid sets by a request to the purchasing officer under which the purchase is listed in this Synopsis. Be sure to identify completely the bid invitation you wish by including in your request the item description, the invitation number or reference number and the opening date.

DEPARTMENT OF DEFENSE

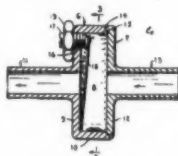
It is not necessary to refer solely to the issuing office for additional data on a bid invitation issued by any of the following U. S. Army Ordnance Offices: Ordnance Tank Automotive Center; Detroit Arsenal; Frankford Arsenal; Picatinny Arsenal; Rock Island Arsenal; Springfield Armory; Watervliet Arsenal; and Watervliet Arsenal. Complete information on any purchase listed by any of those offices alone can be obtained from the Ordnance District Office nearest you. Its address is on file in your nearest Department of Commerce Field Office. Do not ask an Ordnance District Office for information on a purchase unless it is listed by one of the above-named offices.

Invitations for Bids numbers will be followed by the letter "B." Requests for proposals or quotations will be indicated in this column by the letter "Q." or, if numbered, the number will be followed by the letter "Q."

Description	Quantity	Invitation No.	Opening Date
Headquarters, Air Materiel Command, Dayton, Ohio			
Gage pressure dial indicating manifold pressure 10-75 in. mercury type MB-1 in accord with spec MIL-G-3950 dtd 6 July 53 Aerno 61-2422.	805 ea.	RFP-55-5091-Prime Class	3 Dec 54
Contracting Officer, Mobile Air Materiel Area, Brookley Air Force Base, Alabama			
Installation of air conditioning units alterations to hospital bldg., S-179.	Job	IFB-01-601-55-40	29 Nov 54
Purchasing and Contracting Office: George Air Force Base, California			
Re-installing evaporative cooling in government housing consisting of fifty apartments. Work involves carpentry, evaporative coolers, sheetmetal and ductwork and electrical. Unit price bid per apartment.	Job	IFB-04-609	1 Dec 54

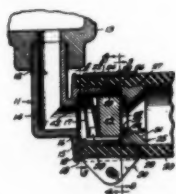
relay is unbalanced in one direction for closing said valve means and operating when unbalanced in the opposite direction for opening said valve means, means responsive to the condition, a first means adapted for positioning by the responsive means only beyond the maximum range of the condition, a second means adapted for positioning by the responsive means only beyond the minimum range of the condition, third means positioned by one of the said first and second means for unbalancing the relay in one direction, fourth means positioned by the other of said first and second means for unbalancing the relay in the opposite direction, and fifth means operating in response to the rate of the agent supply for rebalancing the relay.

2,684,079. FLUID CONTROL VALVE. Fred A. Krohn, Gary, Ind., assignor to Productive Inventions, Inc., a corporation of Indiana. Application May 12, 1950, Serial No. 161,701. 4 Claims. (Cl. 137-493.9.)



1. A regulating and governing valve structure for fluid pressure differential power applications comprising entrance and exit passages and a valve chamber connected to said passages, a round flexible valve plate enclosed and loosely arranged for bodily movement and flexation in said valve chamber responsive to fluid pressure differential variations and positioned between and partially obstructing the fluid flow between said passages, and manually actuated means to limit the free movement of said valve plate within said valve chamber.

2,684,080. CHECK VALVE. Gordon W. Crowell, Glen Ridge, N. J. Application June 22, 1950, Serial No. 169,604. 1 Claim. (Cl. 137-515.5.)



In a check valve for a fluid line a plug member having a tubular portion with a male threaded portion of reduced diameter at the upstream end and a peripheral flange at the downstream end of said tubular portion, said tubular portion having a concave annular surface between said threaded portion and tubular portion and a first annular groove, a body member threaded on said male threaded portion having a third annular groove and a concave portion at the downstream end of said body member which forms a second annular groove with said concave annular surface on said tubular portion, said peripheral flange providing a surface against which a resilient conduit member may abut and the annular grooves providing spaces into which said conduit member may be forced to provide a fluid-tight seal, and a valve seat in said body member including an inner annular surface and an intermediate groove of square cross-section; a resilient ring partially disposed within said groove; a piston slidably and rotatably positioned within said tubular portion including a substantially square body portion, a circular head portion extending downstream from said body portion providing a flat face

Chicago Quartermaster Depot, Quartermaster Purchasing Division, Chicago, Illinois
Bid Forms Now Available. Do Not Request After Opening Date:
Dispenser drinking water 38 ea. 55-160-B 17 Dec 54
size 30, fed spec 00-C-586C.

General Stores Supply Office, 700 Robbins Ave., Philadelphia 11, Pennsylvania
Fan Dest Portable Oscillating Direct Drive Guarded Fed. Spec. W. F. 101B. 5860 ea. (155-549-55B) 14 Dec 54

Officer in Charge, Navy Purchasing Office, Washington, D. C.
Fan, Ventilating, Tube-axial, Size L-1/2A1x5 40 (IFB-600-282-55-S) 21 Dec 54

Switch Fans Vaneaxial 13 (IFB-600-282-55-S) 21 Dec 54
with explosion proof permanent, split capacitor motor.
and dripproof controller, types and sizes as follows: 2-1/2-A56W-5 1A1A4W5-A1-1/2A4W5-A2A4W5.
Fan, Vaneaxial, with spraytight 250V DC motor and dripproof magnetic controller, sizes and types as follows: SR3/4D SR1-3/4D Note: Above matl. per Spec. Ships. F-1716 Dated 1 Oct 54. The matl. called for under this specification is of a Type on the Navy Qualified Product List.

GENERAL SERVICES ADMINISTRATION

General Services Administration, Business Service Center, Region IV, 50 Seventh St., N.E., Atlanta, Georgia
Penthouse type ventilating fans, U.S. Post Office and Court House, Charlotte, N. C. Job CR4-909 21 Dec 54

CONTRACTS AWARDED THROUGH NOV. 22

General Stores Supply Office, 700 Robbins Ave., Philadelphia 11, Pennsylvania
Tubes, heat exchanger copper nickel. (Inv. No. (2)-233-55).—17000 ea., \$69,776.—Revere Copper and Brass, Inc., 1301 Wicomco St., Baltimore 3, Md.

Corps of Engineers, U. S. Army, Office of the District Engineer, Seattle District, 4735 East Marginal Way, Seattle 4, Washington
Expansion of heating plant, McChord AFB, Tacoma, Wash. (ENG-45-108-55-49).—Job, \$183,213.—Wyatt and Kipper Engineer, Inc., 3214 16th Ave., S.W., Seattle 4, Washington.

General Services Administration, Business Service Center, 575 U. S. Courthouse, Chicago, Illinois
Refrigerators.—70 ea., \$13,718.—General Motors Corp., Foreign Distribution Div., 224 W. 57th St., New York 19, N. Y.

Utica Store Opens

UTICA, N. Y.—Tucci Sales & Service, a new appliance store, has been opened at 707 South St. It features laundry repair service.

Finds News Is Current

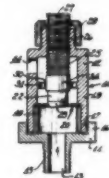


E. J. BOROWIEC

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E. J. Borowiec, Product Engineer—Air Conditioners O. A. Sutton Corporation Wichita 1, Kansas

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"The Newspaper of the Industry"



1. In a fluid control device including a casing having a fluid inlet and an outlet, a flow control annulus of flexible elastomeric material supported in said casing in the path of the flow with its inner edge deflectable toward the outlet in response to variations in pressure, a plunger-like element with its extremity aligned with and projecting into the opening of said annulus for cooperation with said inner edge of said annulus in controlling the rate of flow of fluid to said outlet, and means for relatively moving said plunger extremity and edge to change the controlled rate of flow of fluid, said plunger extremity having a reduced end portion with an external annular surface of generally curved predetermined configuration for cooperation with said annular edge to permit a given rate of flow for each movement of change in the relative changes of position of said extremity and edge.

(To Be Continued)

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Refrigeration Problems and their solution

by Paul Reed

For Service and Installation Engineers



Paul Reed

Ammonia as Refrigerant (3)

If a service engineer, whose experience has been almost entirely with the halogenated hydrocarbon refrigerants ("Freons," "Genetrons," methyl chloride, methylene chloride, etc.) often referred to as the Halocarbon refrigerants, the "straight" hydrocarbons (butane, iso-butane propane, etc.), or sulphur dioxide, has occasion to work on an ammonia system, even a comparatively small one, he is apt to be a bit shy about "tackling" it.

In the first place, it appears strange to him. There is no copper tubing or flared connections. The refrigerant, water, and drain lines are of iron or steel pipe, with flange-type joints. Due to custom to some extent, the equipment itself is apt to be more massive than he is accustomed to.

Refrigeration Design Engineer

Excellent opportunity for engineer with extensive experience in design and development of self-service open type commercial refrigerators. Should be qualified to take charge of designing, and to coordinate design and production. Submit full resume, including experience and salary desired. Our employees know of this ad.

All replies confidential.

BOX A5100, Air Conditioning & Refrigeration News

The serviceman should bear in mind, however, that essentially the ammonia compression cycle is just the same as that of the other refrigerants. If he has been doing work on installations using "Freon-22" (or "Genetron-141"), even the pressures will be no higher than he is accustomed to.

If he applies his basic knowledge of refrigeration principles and his experience with refrigeration equipment, and allows for a few differences in characteristics, he should have no great difficulty in analyzing troubles with ammonia systems, and correcting them.

HALOCARBON REFRIGERANTS MUST BE DRY

One of these differences is the reaction of ammonia with water. With the refrigerants mentioned above, he has had to use the most extreme care, and take all sorts of the most extreme precautions to keep moisture out of the refrigerating system.

With ammonia, he does not have to go to these extreme lengths to keep moisture out of the system. This does not mean that he should take no precautions against getting moisture into an ammonia system. Far from it; he should still exercise care, but it is not as critical with ammonia as with the other refrigerants.

The reason for this is the difference in the amount of water that can be held by the refrigerants, and the chemical reactions between the refrigerant and water.

The best way to explain what this means in the operation of a system, is to compare ammonia and "Freon-12" (or "Genetron-12") as to their mixture with water.

For example, let us take a "Freon-12" system having a 0° F. evaporator. At 0° F., "Freon-12" will absorb only .00083% of its weight of water (8.3 parts of water per million parts of "Freon-12"). If the system holds 20 lbs. of "Freon-12," the entire charge of refrigerant, when chilled to 0° F., will be saturated with about 1/50 of a drop of water.

There could be a great deal more moisture than 1/50 of a drop in the system, but it would have to exist as free water, which would freeze as it went through the expansion valve. Thus, for all practical purposes, we can say that the "Freon-12" must be absolutely dry.

"Freon-22" ("Genetron-141") can absorb many times as much water as "Freon-12," but a system containing 20 lbs. of "Freon-22" at 0° F. would be saturated with moisture if it contained as much as 2 drops of water.

In a system having a 0° F. evaporator and containing 20 lbs. of refrigerant, we could expect freeze-ups at the expansion valve if there were more than 1/50 of a drop of "Freon-12" or 2 drops of "Freon-22" for the excess moisture would exist as free water.

AMMONIA AND WATER MIX READILY

An entirely different condition exists with ammonia. It will absorb water in any proportion, depending upon the temperature of the ammonia. Very small amounts of water in the ammonia do not noticeably affect the boiling point of the ammonia; but as water is added, the temperature of the evaporator becomes higher.

The ammonia absorption system of refrigeration depends upon this ability of ammonia to be absorbed into water, with the added characteristics that the amount of ammonia absorbed into water depends upon the temperature of the water.

In the absorption system, the ammonia vapor comes from the evaporator just the same as in a compression system. Instead of going into a compressor, the ammonia vapor goes into an "absorber" where it is exposed to a cold, weak solution of ammonia and water called "aqua ammonia." The ammonia is absorbed into this "weak aqua" which then becomes "strong aqua."

The strong aqua is pumped over the "generator" where it is heated. This drives off some of the ammonia, reducing the strong aqua to weak aqua again, which goes back to the absorber.

The ammonia vapor driven off

has some water vapor in it, so it passes through "analyzers" and "rectifiers" to take out the water. Then it goes to the condenser, and back to the evaporator, the same as in the compression system.

If one-half the care or less, is exercised in keeping an ammonia system dry as is customary for a "Freon," methyl chloride, or sulphur dioxide system, moisture in the ammonia system would be no problem.

In a system using one of the Halocarbon refrigerants, moisture combines with the refrigerant to form hydrochloric and/or hydrofluoric acids. The amounts of these acids that may be formed is quite small, but they are powerful acids that strongly attack almost any of the materials used in the construction of the equipment. Also, they attack the oil and cause sludges.

Even the free water causes corrosion. In systems such as air conditioning, in which the evaporator operates above 32° F., the free water does not freeze up expansion valves, but it corrodes the system nevertheless.

WET AMMONIA ATTACKS COPPER ALLOYS

Aqua ammonia is not an acid; but instead, a strong alkali. (Household ammonia is a very weak aqua ammonia—about 5%—that is used as a cleaner).

Even weak solutions of aqua ammonia readily attack copper and alloys of copper, particularly brass that contains zinc. Therefore, copper, brass, bronze, and galvanize coatings are not used in ammonia systems.

Evaporators, condensers, liquid and suction lines, valves, fittings, seals, etc., in ammonia systems are usually made of iron or steel. Bearings are most commonly of lead-tin babbitt; although in late years some bearings made of "ammonia bronze," an alloy of copper and tin without zinc, have been used to some extent. Aluminum tubing is sometimes used, particularly in the smaller evaporators.

In recent years, much greater stress is being laid on keeping water out of an ammonia system, but even now, they are not, nor do they have to be, kept as dry as the systems using the Halocarbon refrigerants. Small amounts of moisture that will cause freeze-ups and corrosion in a Halocarbon or hydrocarbon system, will pass entirely unnoticed in an ammonia system.

DETERMINING IF AMMONIA IS WET

But how may we determine if there is water in an ammonia system, and how is it removed?

Water in an ammonia system may not be noticed unless there is enough to effect the evaporator temperature and the ability of the system to maintain the required temperatures. The presence of sludges and evidences of green corrosion on "ammonia bronze" bearings are other indications of a wet ammonia system.

The presence of water in the ammonia may be checked by drawing off a sample of liquid ammonia from the receiver or the charging valve into a glass test tube. Pack this test tube in crushed

ice, or even better, immerse it in cold brine, so that the ammonia will vaporize slowly.

After all of the ammonia is boiled off, some oil and water will remain in the bottom of the test tube with possibly some other impurities. With the ammonia gone, the water will be evident either as droplets in the oil or as a separate stratum of liquid under the oil. Special test tubes with their lower portion drawn into a small graduated tube for greater accuracy in reading the amount of residue, are available.

DRYING AN AMMONIA SYSTEM

If the refrigerant appears to have a good deal of water in it, it is advisable to either discharge the entire charge (this may not be too expensive on small systems), or to dry out the ammonia.

Large systems may be equipped with a purifier or regenerator. There are several types, but in general, they consist of suction line traps into which the oil and water are trapped while the ammonia gas is boiled off, re-enters the suction line, and goes back to the compressor.

There is usually some provision for supplying heat to the traps, but they should be warmed only enough to vaporize the ammonia but not enough to vaporize the moisture. The "dead ammonia" consisting of water and oil with some ammonia, is periodically drawn off from the bottom of the purifier and discarded.

Liquid and suction driers such as those used with the Halocarbon refrigerants are rarely used in ammonia systems, but one type of purifier consists of a large chamber in the suction line, into which are placed flat trays of caustic soda or lime which absorbs moisture from the suction gas.

When ammonia equipment is first installed, it should receive the same care in removing air and moisture as "Freon" equipment. A deep vacuum should be drawn, using a separate vacuum pump. Then the vacuum should be broken with nitrogen or dry air, and another deep vacuum drawn before charging with ammonia.

Ammonia can be used instead of nitrogen or dried air to break the vacuum, but it is usually awkward to discharge that much ammonia. Ammonia can be discharged into water in much the same manner that SO₂ is discharged into a lye solution.

Carbon dioxide should never be used in an ammonia system where it can come into contact with ammonia, for a sludge, ammonia carbonate, is formed. For blowing out an ammonia system, use nitrogen.

(To Be Continued)

Gets Kentucky Charter

LOUISVILLE, Ky. — Peyton-Harned Refrigeration Co. here has been granted a state charter to sell and service refrigerators and other electrical equipment.

Authorized capital stock is 2,000 shares, no par value. The incorporators included O. D. and Edythe Peyton and Ben S. Harned, all of Louisville.

CLASSIFIED ADVERTISING

RATES for "Positions Wanted" \$7.50 per insertion. Limit 50 words. 15¢ per word over 50.

RATES for all other classifications \$10.00 per insertion. Limit 50 words. 20¢ per word over 50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other address by actual word count. Please send payment with order.

POSITIONS WANTED

MANUFACTURERS' AGENT, Metropolitan New York City and northern New Jersey, needs an additional line of air conditioning or refrigeration equipment. ALEX J. WASON, P.O. Box #1, River Edge, New Jersey.

A FIELD representative for an air conditioning manufacturer has lost his job in a reorganization of his employer's sales which eliminates salaried and full-time representation. Now looking for a job in factory sales in which college education and twenty-eight years' experience as salesman, branch manager and district sales manager are essential qualifications. Only three previous employers, and 15 years with one, will indicate stability, character and ability. An excellent sales record will be submitted for investigation. Fully experienced in packaged air conditioners, commercial refrigeration and major electrical appliances. Proven ability to franchise a distributor or dealer organization and to assist them in training their salesmen. Single and free to travel or locate anywhere with the south or southwest preferred. Available now. Address BOX A5099, Air Conditioning & Refrigeration News.

REFRIGERATION, AIR conditioning sales engineer—20 years' experience selling, application and consulting. Graduate Engineer with know-how to setup dealers and distributors. Wants responsibility that will challenge ability. Likes to travel, location optional. Married—excellent health. BOX A5102, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

SALESMAN: To contact refrigeration and air conditioning contractors. A leading wholesale supply house in Chicago needs capable, conscientious, and ambitious man to sell top lines of equipment, specialties, and pipe, valves and fittings. Some experience in the refrigeration industry necessary. Please give complete details, including age, experience, education and references. Our organization has knowledge of this ad; all replies will be held in strict confidence. FRED C. KRAMER COMPANY, 128-138 South Paulina Street, Chicago 12, Illinois.

WANTED—MANUFACTURERS' representatives now contacting commercial refrigeration dealers in the following territories:

Chicago, Atlanta, Detroit & Florida. Must be able to sell quality equipment: fast-growing line of special commercial refrigeration items of interest to established refrigeration dealers. Replies confidential. Write: Paul R. Stewart, C. SCHMIDT COMPANY, 1712 John Street, Cincinnati 14, Ohio.

WANTED—MANUFACTURER'S representative. National manufacturer of complete line of air conditioning equipment, including room air conditioners, residential and commercial units in both water and air cooled, has several territories open on commission. Give experience, lines carried and type of accounts now being called on. BOX A5087, Air Conditioning & Refrigeration News.

WANTED: REFRIGERATION and air conditioning engineer who has experience or aptitude in sales and is willing to travel. Excellent opportunity for man who can take charge of our refrigeration field sales promotion department. Leading company in its field with aggressive management. Reply with full details to BOX A5101, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

CLUTCH, POWER transmission. Quantity: 165. Make: Mercury. Specifications: Model 657, Type "C", Style 4097-16, Shaft Bore 1", Pulley—2 grooves, 4.25" pitch dia. A section 2 set screws in hub clutch release—1600 RPM. 45# ft. torque @ 1600 RPM. 85# ft. torque @ 1970 RPM. Available for inspection at KECO INDUSTRIES, INC., 2832 Spring Grove Avenue, Cincinnati 26, Ohio. Telephone MUlberry 1313, ask for Mr. Hoffmann.

FOR SALE: Brand new popular brand 1/2 HP compressor with flywheel and service valves. \$52.50—Model F 1 HP \$62.50. Price includes free transportation to destination. Send for parts catalog listing other money saving values. WALTER W. STARR, 2833 Lincoln Avenue, Chicago 13, Illinois.

BUSINESS OPPORTUNITIES

FOR LEASE—Commercial refrigeration and air conditioning business. Midwest city with 125,000 population. Frigidaire and C. V. Hill distributorships. Will lease business and building established twenty (20) years, for percentage of sales. Will require minimum of \$13,000 cash outlay for parts, inventory, tools and vehicles. In replying state qualifications, background, etc. Replies kept confidential. Reply BOX A5096, Air Conditioning & Refrigeration News.

FOR SALE: Successful sales and service business on booming Texas Gulf Coast. Unusual opportunity for commercial refrigeration and motor winding service, write for detailed information. About \$7,000. BOX A5103, Air Conditioning & Refrigeration News.

OVER 50,000,000 RANCO CONTROLS IN USE!

RANCO controls give dependable, trouble-free service. That's why more than 50,000,000 are now in use throughout the world. RANCO controls are designed and precision-built by refrigeration specialists to provide accurate control for every job. They eliminate call-backs and increase your profits. And remember this . . . RANCO controls are available for almost 5,000 replacement installations.



Ranco Inc.

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WORLD'S LARGEST MANUFACTURER OF REFRIGERATION CONTROLS

010-1402
Low Pressure
Cut-In Commercial
Control

Like all Ranco commercial controls, compact and sturdy constructed, and adaptable to installation requirements.



'Biggest' Heating, Ventilating Show Plans--

(Concluded from Page 1, Col. 3)
cident with the 61st annual meeting of its sponsor, The American Society of Heating and Ventilating Engineers. The dates: Jan. 24 to 28.

Leading manufacturers of heating, ventilating, and air conditioning equipment will be represented among the exhibitors.

The exposition will include many outstanding displays in all departments. One of the most informative will be that of the ASHVE itself, highlighting its \$200,000 research program. Included in this program are projects on heat flow through glass, odor perception, noise in piping, air distribution by air jets, and air contaminants.

Air infiltration is at present being studied by means of the National Bureau of Standards' katharometer, a research tool that is expected to have wide application in the future. For the demonstration at the society's exhibit, a charge of helium is used as a tracer gas. Mixed with room air, the katharometer intermittently measures the helium content of a sample indicating the change occurring as dilution is gradually produced by infiltration.

The exhibit will also demonstrate measurement of dust particles as small as $\frac{1}{100,000}$ of an inch. This analysis of air contaminants, by quantity, size, and type, will be effected by a centrifugal sedimentation apparatus developed by the University of Michigan.

COLOR DOES NOT AFFECT HEAT REFLECTIVITY

A third display will prove, to the surprise of many visitors, that color does not affect heat reflectivity as it does light reflection.

Among products to be exhibited for the first time is a noteworthy group which reflects the interest of the construction industry in warm air heating. In this connection, it will be observed that many manufacturers of heating components in this field are thinking in terms of cooling, as well as heating.

Visitors will note among "firsts," a newly-developed positive humidifier for warm air heat. This unit produces water vapor by the use of a centrifugal mechanical atomizer under humidistat control and is applicable to any warm air duct system.

A new filter gauge designed to ensure that filters in warm air systems and air conditioning equipment are changed at the proper time, will be another of the "firsts," as will innovations in the design and construction of a line of electronic air cleaners.

AIR MOVEMENT DISPLAYS

In the field of air movement, there will be a primary exhibit of flexible tubing for branch ducting in both high and low pressure air conditioning systems. A new finish for pipe and duct covering, designed to protect insulation against weather, abrasion, chemicals, mildew, and other destructive influences, is prefabricated from a specially compounded poly-vinyl chloride plastic. Airtight, watertight, and vaporproof, it requires no cutting, fitting, or sewing in the field.

Still another innovation is a one-piece molded pipe insulation of fine glass fibers. Made with a single seam, it spreads to receive

the pipe, then snaps closed.

In the field of air distribution, an innovation will be a three-way functional ceiling, that is to say, a construction that combines in one unit radiant heating, radiant cooling, and sound conditioning. This design is said to be sufficiently sensitive to control to eliminate either lag or override on both heating and cooling phases.

GRILLES, DIFFUSERS, COILS

Also shown will be a new series of ceiling and high sidewall grilles, featuring individually adjustable curved extruded aluminum louvers. At another booth will be a new series of baseboard diffusers. A third exhibit in kind will reveal many types of radiant baseboard and also radiant coils for panel heating applications.

A manufacturer of air and water-cooled compressors will offer an entirely new line especially designed for air-cooled applications, in 1 to 3-hp. sizes. Primarily designed for central air conditioning, they will be offered to manufacturers of heating equipment for incorporation into existing furnace lines.

One of the largest manufacturers of centrifugal pumps will display models of the latest line of small air conditioning pumps, introduced during 1954.

A manufacturer of electric motors will have on display a new three-speed capacitor type motor for the fan and blower industry; a fan manufacturer will exhibit a new packaged centrifugal type induced draft fan; and a manufacturer of regulating instruments will be at the exposition with a complete line of warm air fan and limit controls.

NEW ZONE CONTROL METHOD

A manufacturer of steel boilers for home heating, as well as domestic burners and boiler-burner units, has developed a new method for obtaining zone control and regulated hot water heating combined with summer cooling. After three years on the market, this system now appears with a number of advanced features.

The system, comprised of independently controlled room units with central heat supply, consists of what are in effect recessed wall unit convectors, sized to fit between standard studding. Within each convector a motored blower draws room air in at the top, forcing it over a tubular heat exchanger and out through a grille at the base.

Such is the design that the heating or cooling effect is regulated almost entirely by the speed of the blower, which, in turn, is controlled by a room thermostat. When used for cooling as well as heating, a pan in the base of the unit collects water of dehumidification for drainage to the basement.

The products of many room air conditioner manufacturers will be on view at the show as well as residential air conditioning equipment.

The organization of the exposition includes an advisory committee under the chairmanship of L. N. Hunter, president of the ASHVE. Membership of the committee includes 14 representatives of the society's official family, and also a panel of 14 representatives of other industrial groups allied with heating, ventilating, and air conditioning.

Philco 9 Mos. Net Shows Decline, Strike Blamed

PHILADELPHIA—Sales of Philco Corp. in the first nine months of 1954 totaled \$249,726,000, and net income was \$2,275,000 or 53 cents per share of common stock on the 3,771,850 shares now outstanding, it was announced by James H. Carmine, president.

The lower level of sales and earnings as compared with last year was due principally to the strike which closed the company's electronic plants for 45 days in May and June and the resulting late start on production of the fall television and radio line.

In the first nine months of 1953, sales totaled \$335,171,000, and net income from operations was \$10,135,000 or \$2.61 per share. In addition, non-recurring income from the sale of television station WPTZ amounted after taxes to \$5,283,000 or \$1.40 per share.

In the third quarter of 1954, due to the late start on television production, sales were \$75,050,000. After absorbing starting costs on the initial production of the new television and radio lines, net income for the third quarter after tax adjustments amounted to \$540,000 or 12 cents per common share.

Television production got underway in August and increased steadily throughout September to reach a high level early in the fourth quarter, it was pointed out.

Heating Meeting--

(Concluded from Page 1, Col. 5)

committee of the National Association of Home Builders, will discuss the objectives of the air conditioned village from the home builder's viewpoint.

On Thursday afternoon, conventioners will hear reports on work done at the association's research residences at the University of Illinois. C. F. Chen will discuss cooling research using a perimeter loop duct system in research residence No. 3 and D. R. Bahnfleth will talk on small pipe perimeter cooling investigation in research residence No. 2.

H. T. Gilkey will report on an investigation of small pipe perimeter heating in research residence No. 2 and on pressure losses in perimeter fittings and diffusers.

Another highlight of the Monday morning session will be a talk on the "Rehabilitation and Modernization Market" by John Ryan Doscher, assistant to the publisher of *Life* magazine. C. B. Phillips, NWAHACA president, will start off the convention with an address of "Progress and Our Opportunities."

On Monday afternoon, H. E. Riley, chief of the division of construction statistics in the U. S. Bureau of Labor Statistics, will present "The Building Market Outlook for 1955."

Edith Brazwell Evans, editor-in-chief of *Living for Young Moderns*,

will speak on "Design for Comfort." John D. Corrigan of Business Economists, will advise "How to Build Profit Value in Your Sales Dollar," and Harry C. Gurney, sales manager of the Heating and Air Conditioning Div., Surface Combustion Corp. will tell why "Now is the Time To Decide."

"Sunshine Gene" Flack of Sunshine Biscuits, Inc. will be guest luncheon speaker on Monday and Dr. Henry J. Barton will fill the same role on Tuesday.

The Tuesday morning session will be devoted to committee reports.

Air Conditioned Cars--

(Concluded from Page 1, Col. 4)

mination of dust, wind, bugs, and heat inside the car during summer driving," he said.

"Year-round car conditioning is no more a luxury than a heater, and in most areas of the country the cooling system will be used more than the heating section."

He went on to say that a recent survey revealed that of the people now owning air conditioned cars, 97% of them said they would get it in their next car.

During the past two years, the industry has sold about 125,000 units. This great enthusiasm for car conditioning is due in part to the tremendous public acceptance of household air conditioning in the past few years, he further indicated.

Inner-Fin Coils . . .

BUSH Research in Action







Inner-Fin coils . . . a BUSH exclusive . . . represent the first really new development in heat transfer engineering since finned coil replaced bare pipe.

BUSH Inner-Fin, now being widely used in window air conditioners, packaged units, etc., provides a higher rate of heat transfer in less space . . . permits manufacturers more flexibility in design of their units, compactness in construction.

Perhaps Inner-Fin can be utilized to make your heat transfer products better. Drop a line. We'll be glad to talk it over.



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A leading well-established manufacturer in the commercial refrigeration field would like to contact an administrative engineer with outstanding creative ability.

The successful applicant must have a proven background of accomplishment. He will take charge of our complete product engineering program, supervising a staff of trained engineers. The salary is open. Reply in confidence to

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